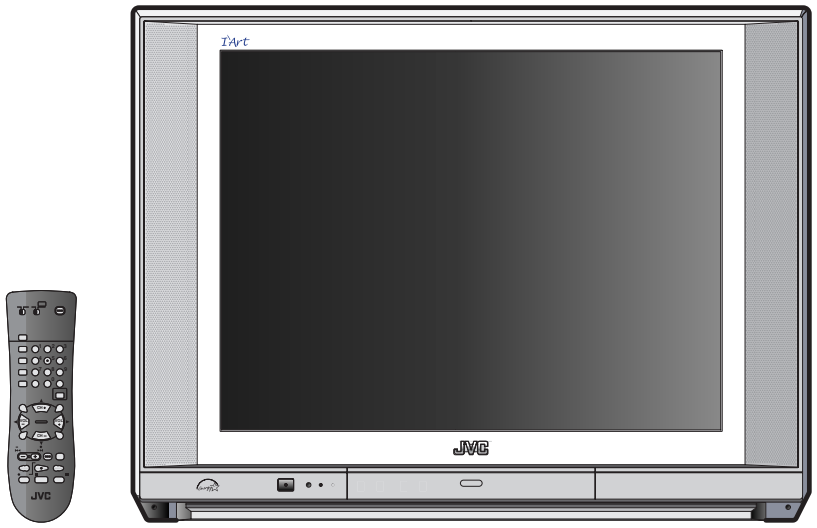
JVC

SERVICE MANUAL

COLOR TELEVISION

AV-24F704



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No. 52132
2003/05

SPECIFICATIONS

TELEVISION

Picture Tube:	24” (measured diagonally)
Color System:	NTSC
TV RF System:	US System M
Tuner Type:	181 Channel, Quartz PLL Frequency Synthesized
Receiving Channels:	VHF 2-13
	UHF 14-69
	CATV 01-97 (5A)-(A-3)
	98-99 (A-2)-(A-1)
	14-22 (A)-(I)
	23-36 (J)-(W)
	37-65 (AA)-(FFF)
	66-125 (GGG)-(125)
Intermediate Frequency:	Picture (FP) : 45.75 MHz
	Sound (FS) : 41.25 MHz
	FP-FS : 4.50 MHz
Antenna Input:	VHF/UHF/CATV In 75 ohms coaxial, F-Type Connector
Speaker:	2” x 4-3/4”, 8 ohms x 2
Audio Output Power:	5 W + 5 W

GENERAL

Power Source:	120 V AC, 60 Hz
Power Consumption:	125 Watts
Dimensions(W x H x D):	26-1/2” (670 mm) x 19-1/8” (484 mm) x 20-1/8” (509 mm)
Weight:	72.6 lbs/33 kg
Video/Audio Inputs:	Component input
	Y input: 1.0 Vp-p, 75 ohm (RCA pin jack)
	Pb, Pr input : 0.7 Vp-p, 75 ohm (RCA pin jack)
	S-Video input
	Y input: 1.0 Vp-p, 75 ohm
	C input: 0.3 Vp-p, 75 ohm
	Video input: 1.0 Vp-p, 75 ohm (RCA pin jack)
	Audio input: -8dB, 47 kohm (RCA pin jack)
Headphone Jack:	3.5 mm mini-jack
Storage Temperature	-20 °C ~ 60 °C
Operating Temperature	5 °C ~ 40 °C

Accessories:

Remote Control X 1
Batteries (UM-3) X 2

Design & specification are subject to change without notice.

SAFETY PRECAUTIONS

SERVICING NOTICES ON CHECKING

1. KEEP THE NOTICES

As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.

2. AVOID AN ELECTRIC SHOCK

There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.

3. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.

Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a ⚠ mark, the designated parts must be used.

4. PUT PARTS AND WIRES IN THE ORIGINAL POSITION AFTER ASSEMBLING OR WIRING

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled in the condition that these do not contact with the printed board.

The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts.

Therefore, put these parts in the original positions.

5. TAKE CARE TO DEAL WITH THE CATHODE-RAY TUBE

In the condition that an explosion-proof cathoderay tube is set in this equipment, safety is secured against implosion.

However, when removing it or serving from backward, it is dangerous to give a shock. Take enough care to deal with it.

6. AVOID AN X-RAY

Safety is secured against an X-ray by considering about the cathode-ray tube and the high voltage peripheral circuit, etc. Therefore, when repairing the high voltage peripheral circuit, use the designated parts and make sure not modify the circuit. Repairing except indicates causes rising of high voltage, and it emits an X-ray from the cathoderay tube.

7. PERFORM A SAFETY CHECK AFTER SERVICING

Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the serviced places serviced or not. Check the insulation between the antenna terminal or external metal and the AC cord plug blades.

And be sure the safety of that.

(INSULATION CHECK PROCEDURE)

1. Unplug the plug from the AC outlet.
2. Remove the antenna terminal on TV and turn on the TV.
3. Insulation resistance between the cord plug terminals and the eternal exposure metal **[Note 2]** should be more than 1M ohm by using the 500V insulation resistance meter **[Note 1]**.
4. If the insulation resistance is less than 1M ohm, the inspection repair should be required.

[Note 1]

If you have not the 500V insulation resistance meter, use a Tester.

[Note 2]

External exposure metal: Antenna terminal
Earphone jack

HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the VERSION LETTER.)

1. MODEL NUMBER and VERSION LETTER
   The MODEL NUMBER can be found on the back of each product and the VERSION LETTER can be found at the end of the SERIAL NUMBER.
2. PART NO. and DESCRIPTION
   You can find it in your SERVICE MANUAL.

IMPORTANT

Inferior silicon grease can damage IC's and transistors.
When replacing an IC's or transistors, use only specified silicon grease (YG6260M).
Remove all old silicon before applying new silicon.

SPECIFIC SERVICE INSTRUCTIONS

DISASSEMBLY INSTRUCTIONS

1. REMOVAL OF ANODE CAP

Read the following **NOTED** items before starting work.

* After turning the power off there might still be a potential voltage that is very dangerous. When removing the Anode Cap, make sure to discharge the Anode Cap's potential voltage.
* Do not use pliers to loosen or tighten the Anode Cap terminal, this may cause the spring to be damaged.

REMOVAL

1. Follow the steps as follows to discharge the Anode Cap. **(Refer to Fig. 1-1.)**
   Connect one end of an Alligator Clip to the metal part of a flat-blade screwdriver and the other end to ground.
   While holding the plastic part of the insulated Screwdriver, touch the support of the Anode with the tip of the Screwdriver.
   A cracking noise will be heard as the voltage is discharged.

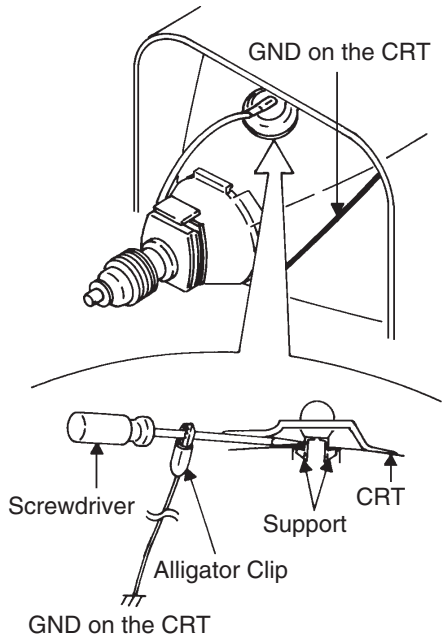


Fig. 1-1

2. Flip up the sides of the Rubber Cap in the direction of the arrow and remove one side of the support. **(Refer to Fig. 1-2.)**

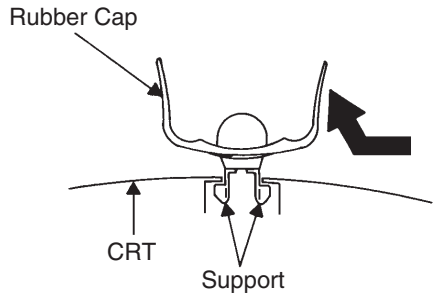


Fig. 1-2

3. After one side is removed, pull in the opposite direction to remove the other.

NOTE

Take care not to damage the Rubber Cap.

INSTALLATION

1. Clean the spot where the cap was located with a small amount of alcohol. **(Refer to Fig. 1-3.)**

NOTE

Confirm that there is no dirt, dust, etc. at the spot where the cap was located.

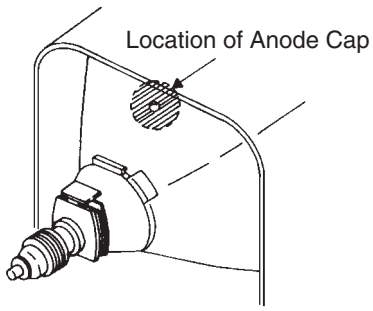


Fig. 1-3

2. Arrange the wire of the Anode Cap and make sure the wire is not twisted.
3. Turn over the Rubber Cap. **(Refer to Fig. 1-4.)**

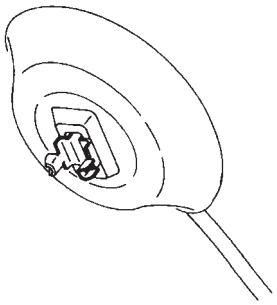


Fig. 1-4

4. Insert one end of the Anode Support into the anode button, then the other as shown in **Fig. 1-5**.

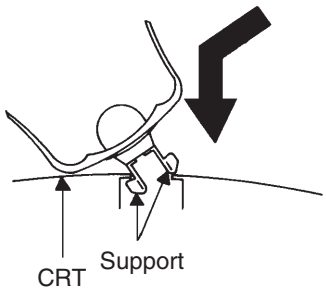


Fig. 1-5

5. Confirm that the Support is securely connected.
6. Put on the Rubber Cap without moving any parts.

2. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

REMOVAL

1. Put the Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage.
   (Refer to Fig. 2-1.)

   NOTE

   Masking is carried out on all the parts located within 10 mm distance from IC leads.

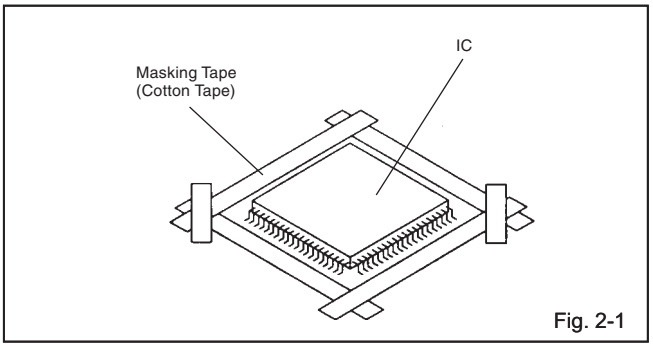


Fig. 2-1

2. Heat the IC leads using a blower type IC desoldering machine.
   (Refer to Fig. 2-2.)

   NOTE

   Do not add the rotating and the back and forth directions force on the IC, until IC can move back and forth easily after desoldering the IC leads completely.

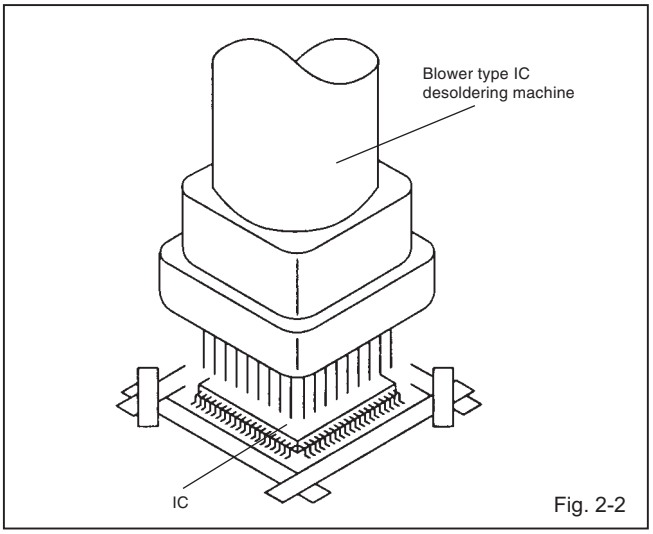


Fig. 2-2

3. When IC starts moving back and forth easily after desoldering completely, pickup the corner of the IC using a tweezers and remove the IC by moving with the IC desoldering machine.
   (Refer to Fig. 2-3.)

   NOTE

   Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.

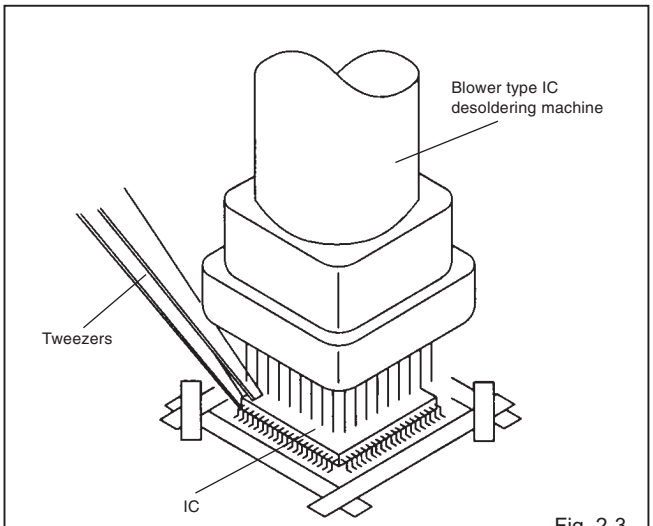


Fig. 2-3

4. Peel off the Masking Tape.
5. Absorb the solder left on the pattern using the Braided Shield Wire. **(Refer to Fig. 2-4.)**

   NOTE

   Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.

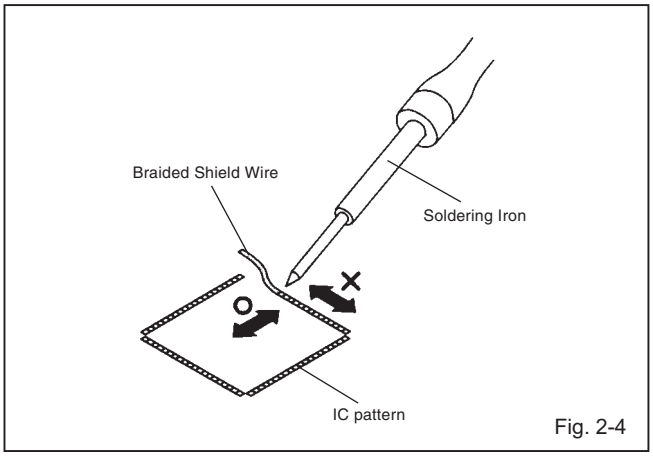


Fig. 2-4

INSTALLATION

1. Take care of the polarity of new IC and then install the new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily.
   (Refer to Fig. 2-5.)

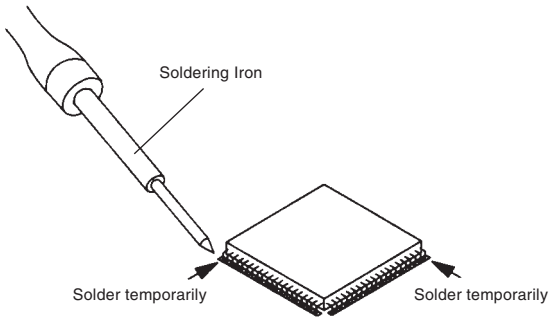


Fig. 2-5

2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads.
   (Refer to Fig. 2-6.)

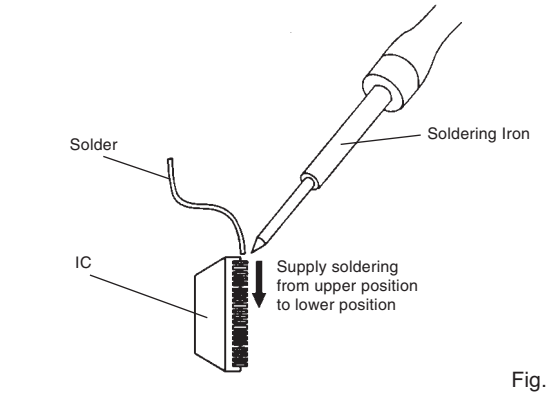


Fig. 2-6

3. Absorb the solder left on the lead using the Braided Shield Wire.
   (Refer to Fig. 2-7.)

   NOTE

   Do not absorb the solder to excess.

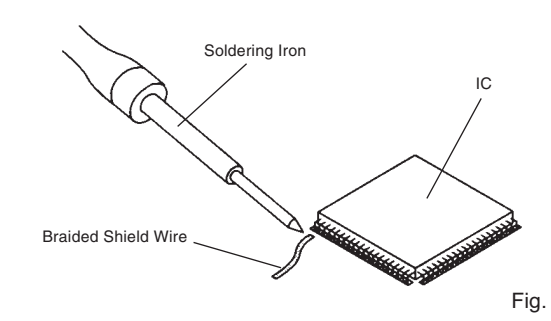


Fig. 2-7

4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thintip Soldering Iron.
   (Refer to Fig. 2-8.)

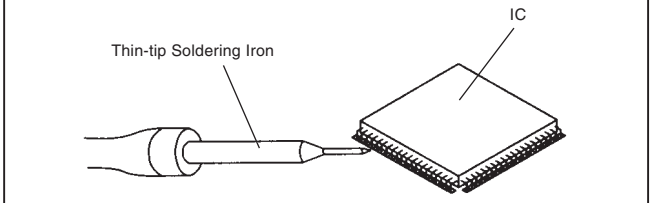


Fig. 2-8

5. Finally, confirm the soldering status on four sides of the IC using a magnifying glass.
   Confirm that no abnormality is found on the soldering position and installation position of the parts around the IC. If some abnormality is found, correct by resoldering.

   NOTE

   When the IC leads are bent during soldering and/or repairing, do not repair the bending of leads. If the bending of leads are repaired, the pattern may be damaged. So, be always sure to replace the IC in this case.

SERVICE MODE LIST

This unit provided with the following SERVICE MODES so you can repair, examine and adjust easily.
To enter the Service Mode, press both set key and remote control key for more than 1 second.

Set Key	Remocon Key	Operations
VOL. (-) MIN	0	Releasing of V-CHIP PASSWORD.
VOL. (-) MIN	1	Initialization of the factory. NOTE: Do not use this for the normal servicing. If you set a factory initialization, the memories are reset such as the channel setting, and the POWER ON total hours.
VOL. (-) MIN	3	Remocon format selection. (JVC format → NEC format) NOTE: Supplied remocon can not be operated at NEC format. (The "N" is always displayed on the monitor.) Do not use this for the normal servicing.
VOL. (-) MIN	6	POWER ON total hours is displayed on the screen. Refer to the "CONFIRMATION OF HOURS USED". Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
VOL. (-) MIN	8	Writing of EEPROM initial data. NOTE: Do not use this for the normal servicing.
VOL. (-) MIN	9	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).

CONFIRMATION OF HOURS USED

POWER ON total hours can be checked on the screen.
Total hours are displayed in 16 system of notation.

NOTE: If you set a factory initialization, the total hours is reset to "0".

1. Set the VOLUME to minimum.
2. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 1 second.
3. After the confirmation of using hours, turn off the power.

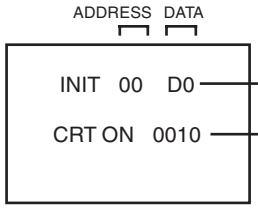


FIG. 1

Initial setting content of MEMORY IC.

POWER ON total hours.
= (16 x 16 x 16 x thousands digit value)
+ (16 x 16 x hundreds digit value)
+ (16 x tens digit value)
+ (ones digit value)

WHEN REPLACING EEPROM (MEMORY) IC

If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to TABLE 1.

NOTE: No need setting for after INI 10 due to the adjustment value.

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
00	D0	E8	02	64	5E	B3	24	37	39	AC	00	04	40	40	40	7F
10	50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table 1

1. Enter DATA SET mode by setting VOLUME to minimum.
2. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 1 second. ADDRESS and DATA should appear as FIG 1.
3. ADDRESS is now selected and should "blink". Using the VOL. +/- button on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
4. Press ENTER to select DATA. When DATA is selected, it will "blink".
5. Again, step through the DATA using VOL. +/- button until required DATA value has been selected.
6. Pressing ENTER will take you back to ADDRESS for further selection if necessary.
7. Repeat steps 3 to 6 until all data has been checked.
8. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input. **After the data input, set to the initializing of shipping**.
9. Turn on the POWER.
10. Press both VOL. DOWN button on the set and Channel button **(1)** on the remote control for more than 1 second.
11. After the finishing of the initializing of shipping, the unit will turn off automatically.

The unit will now have the correct DATA for the new MEMORY IC.

SERVICE ADJUSTMENTS

ELECTRICAL ADJUSTMENTS

1. ADJUSTMENT PROCEDURE

Read and perform these adjustments when repairing the circuits or replacing electrical parts or PCB assemblies.

CAUTION

- Use an isolation transformer when performing any service on this chassis.
- Before removing the anode cap, discharge electricity because it contains high voltage.
- When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
- When you exchange IC and Transistor for a heat sink, apply the silicon grease on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damages to the IC and Transistor.)

Prepare the following measurement tools for electrical adjustments.

1. Oscilloscope
2. Digital Voltmeter
3. Multi-Sound Signal Generator
4. Pattern Generator

On-Screen Display Adjustment

1. In the condition of NO indication on the screen.
   Press the VOL. DOWN button on the set and the Channel button **(9)** on the remote control for more than 1 second to appear the adjustment mode on the screen as shown in **Fig. 1-1**.

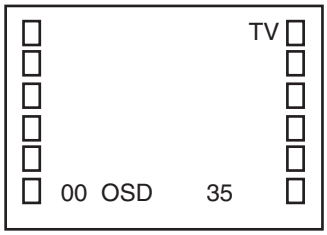


Fig. 1-1

3. Use the Channel UP/DOWN button or Channel button **(0-9)** on the remote control to select the options shown in **Fig. 1-2**.
4. Press the MENU button on the remote control to end the adjustments.

NO.	FUNCTION	NO.	FUNCTION
00	OSD H	18	CONTRAST MAX
01	CUT OFF	19	CONTRAST CENT
02	H. VCO	20	CONTRAST MIN
03	H. PHASE	21	COLOR MAX
04	AFC GAIN	22	COLOR CENT
05	V. SHIFT	23	COLOR MIN
06	H. SIZE	24	TINT
07	V. SIZE	25	SHARPNESS
08	V. LINEARITY	26	Cb DELAY FINE
09	VS CORRECTION	27	Cr DELAY FINE
10	DRIVE R	28	Cb PEDESTAL ADJ
11	DRIVE B	29	Cr PEDESTAL ADJ
12	R CUT OFF	30	E/W PARABOLA
13	G CUT OFF	31	E/W CORNER
14	B CUT OFF	32	E/W TRAPEZIUM
15	BRIGHT MAX	33	LEVEL
16	BRIGHT CENT	34	SEPARATION1
17	BRIGHT MIN	35	SEPARATION2

Fig. 1-2

2. BASIC ADJUSTMENTS

2-1: CONSTANT VOLTAGE

1. Place the set with Aging Test for more than 5 minutes.
2. Set condition is AV MODE without signal.
3. Connect the digital voltmeter to the **TP003**.
4. Adjust the **VR502** until the DC voltage is 117 ± 1V.

2-2: CUT OFF

1. Adjust the unit to the following settings.
   G DRIVE=64, B DRIVE=64, R CUT OFF=127, G CUT OFF=127, B CUT OFF=127
2. Place the set with Aging Test for more than 15 minutes.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(01)** on the remote control to select “CUT OFF”.
4. Adjust the **Screen Volume** until a dim raster is obtained.

2-3: WHITE BALANCE

NOTE: Adjust after performing CUT OFF adjustment.

1. Place the set with Aging Test for more than 10 minutes.
2. Receive the gray scale pattern from the Pattern Generator.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(12)** on the remote control to select “R. BIAS”.
5. Press the CH. UP/DOWN button on the remote control to select the “R. BIAS”, “G. BIAS”, “B. BIAS”, “B. DRIVE” or “G. DRIVE”.
6. Adjust the VOL. UP/DOWN button on the remote control to whiten the R. BIAS, G. BIAS, B. BIAS, B. DRIVE, and G. DRIVE at each step tone sections equally.
7. Perform the above adjustments 5 and 6 until the white color is looked like a white.

2-4: FOCUS

1. Receive the monoscope pattern.
2. Turn the Focus Volume fully counterclockwise once.
3. Adjust the **Focus Volume** until picture is distinct.

2-5: HORIZONTAL POSITION

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(03)** on the remote control to select "H.PHASE".
4. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on right and left becomes minimum.

2-6: HORIZONTAL SIZE

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(06)** on the remote control to select "H. SIZE".
4. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on right and left becomes 11 ± 1%.

2-7: VERTICAL POSITION

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Adjust the **VR401** until the horizontal line becomes fit to the notch of the shadow mask.

2-8: VERTICAL SIZE

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(07)** on the remote control to select “V. SIZE”.
4. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on upside and downside becomes 9 ± 2%.

2-9: VERTICAL LINEARITY

NOTE: Adjust after performing adjustments in section 2-8.
After the adjustment of Vertical Linearity, reconfirm the Vertical Position and Vertical Size adjustments.

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(08)** on the remote control to select “V. LIN”.
4. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on upside and downside becomes minimum.

2-10: OSD HORIZONTAL

1. Activate the adjustment mode display of **Fig. 1-1**.
2. Press the VOL. UP/DOWN button on the remote control until the difference of A and B becomes minimum.
(Refer to Fig. 2-1)

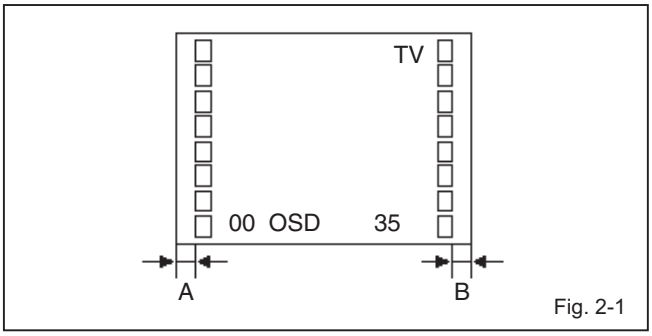


Fig. 2-1

2-11: SEPARATION 1, 2

Please do the method (1) or method (2) adjustment.

Method (1)

1. Set the multi-sound signal generator for each different Lch and R-ch frequency (Ex. L-ch=2KHz, R-ch=400Hz) and receive the RF.
2. Connect the oscilloscope to the **Audio Out Jack**.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(34)** on the remote control to select “SEP1”.
4. Press the VOL. UP/DOWN button on the remote control to adjust it until the audio output wave becomes a fine sine wave.
5. Press the CH UP button once the set to “SEP 2” mode.
Then perform the above adjustment 4.

Method (2)

1. Set the multi-sound signal generator L-ch=1KHz, R-ch=Non input and receive the RF.
2. Connect the oscilloscope to the **Audio Out Jack (R-ch)**.
3. Press the AUDIO SELECT button on the remote control to set to the stereo mode.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(34)** on the remote control to select “SEP 1”.
5. Press the VOL. UP/DOWN button on the remote control to adjust it until the R-ch output becomes minimum.
6. Set the multi-sound signal generator L-ch=Non input, R-ch=1KHz and receive the RF.
7. Connect the oscilloscope to the Audio Out Jack (L-ch).
8. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(35)** on the remote control to select “SEP 2”.
9. Press the VOL. UP/DOWN button on the remote control to adjust it until the L-ch output becomes minimum.

2-12: BRIGHT CENTER

1. Receive the monoscope pattern. (RF Input)
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(16)** on the remote control to select “BRI. CENT”.
4. Press the VOL. UP/DOWN button on the remote control until the white 15% is starting to be visible.
5. Receive the monoscope pattern. (Audio Video Input)
6. Press the TV/VCR button on the remote control to set to the AV mode. Then perform the above adjustments 2~4.
7. Press the TV/VCR button on the remote control to set to the CS mode.
8. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(16)** on the remote control to select “BRI. CENT”.
9. Press the VOL. UP/DOWN button on the remote control to set the same step numbers as the AV.

2-13: TINT/COLOR CENT

1. Receive the color bar pattern. (RF Input)
2. Connect the oscilloscope to **TP806**.
3. Using the remote control, set the brightness, contrast, color and tint to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(24)** on the remote control to select “TINT”.
5. Press the VOL. UP/DOWN button on the remote control until the section “A” becomes a straight line **(Refer to Fig. 2-2)**.
6. Connect the oscilloscope to **TP804**.
7. Press the CH DOWN button 2 times to set to “COL. CENT” mode.
8. Adjust the VOLTS RANGE VARIABLE knob of the oscilloscope until the range between white 100% and 0% is set to 5 scales on the screen of the oscilloscope.
9. Press the VOL. UP/DOWN button on the remote control until the red color level is adjusted to 120 ± 10% of the white level. **(Refer to Fig. 2-3)**
10. Receive the color bar pattern. (Audio Video Input)
11. Press the TV/VCR button on the remote control to set to the AV mode. Then perform the above adjustments 2~9.
12. Press the TV/VCR button on the remote control to set to the CS mode.
13. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(24)** on the remote control to select “TINT”.
14. Press the VOL. UP/DOWN button on the remote control to set the same step numbers as the AV.
15. Press the CH DOWN button 2 times to set to “COL.CENT” mode.
16. Press the VOL. UP/DOWN button on the remote control to set the same step numbers as the AV.

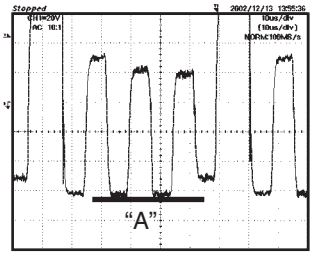


Fig. 2-2

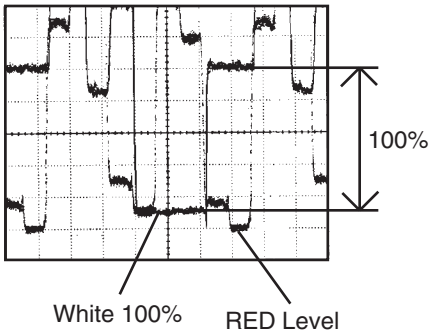


Fig. 2-3

2-14: CONTRAST MAX MANUAL

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(18)** on the remote control to select “CONT. MAX”.
2. Press the VOL. UP/DOWN button on the remote control until the contrast step No. becomes “98”.
3. Receive a broadcast and check if the picture is normal.
4. Press the TV/VCR button on the remote control to set to the AV mode. Then perform the above adjustments 1~3.
5. Press the TV/VCR button on the remote control to set to the CS mode. Then perform the above adjustments 1~3.

2-15: LEVEL

1. Receive the VHF HIGH (70dB).
2. Connect the AC voltmeter to the **pin 6 of CP101**.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(33)** on the remote control to select “LEVEL”.
4. Press the VOL. UP/DOWN button on the remote control until the AC voltmeter is 85 ± 2mV.

2-16: TRAPEZIUM

1. Receive the crosshatch signal from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(32)** on the remote control to select “TRAPEZIU”.
4. Press the VOL. UP/DOWN button on the remote control until the both vertical lines of the screen become parallel.

2-17: PARABOLA

1. Receive the crosshatch signal from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(30)** on the remote control to select “PARABOLA”.
4. Press the VOL. UP/DOWN button on the remote control until the right and left vertical lines are straight.

2-18: Confirmation of Fixed Value (step No.)

Please check if the fixed values of the each adjustment items are set correctly referring below.

NO.	FUNCTION	RF/AV/CS
02	H. VCO	03
04	AFC GAIN	04
05	V. SHIFT	02
09	VS CORRECTION	42
15	BRIGHT MAX	140
17	BRIGHT MIN	50
19	CONTRAST CENT	64
20	CONTRAST MIN	16
21	COLOR MAX	90
23	COLOR MIN	00
25	SHARPNESS	40
26	Cb DELAY FINE	00
27	Cr DELAY FINE	00
28	Cb PEDESTAL ADJ	08
29	Cr PEDESTAL ADJ	08
31	E/W CORNER	31

3. PURITY AND CONVERGENCE ADJUSTMENTS

NOTE

1. Turn the unit on and let it warm up for at least 30 minutes before performing the following adjustments.
2. Place the CRT surface facing east or west to reduce the terrestrial magnetism.
3. Turn ON the unit and demagnetize with a Degauss Coil.

3-1: STATIC CONVERGENCE (ROUGH ADJUSTMENT)

1. Tighten the screw for the magnet. Refer to the adjusted CRT for the position. **(Refer to Fig. 3-1)**
   If the deflection yoke and magnet are in one body, untighten the screw for the body.
2. Receive the green raster pattern from the color bar generator.
3. Slide the deflection yoke until it touches the funnel side of the CRT.
4. Adjust center of screen to green, with red and blue on the sides, using the pair of purity magnets.
5. Switch the color bar generator from the green raster pattern to the crosshatch pattern.
6. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
7. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.
8. Adjust the crosshatch pattern to change to white by repeating steps 6 and 7.

3-2: PURITY

NOTE

Adjust after performing adjustments in section 3-1.

1. Receive the green raster pattern from color bar generator.
2. Adjust the pair of purity magnets to center the color on the screen.
   Adjust the pair of purity magnets so the color at the ends are equally wide.
3. Move the deflection yoke backward (to neck side) slowly, and stop it at the position when the whole screen is green.
4. Confirm red and blue color.
5. Adjust the slant of the deflection yoke while watching the screen, then tighten the fixing screw.

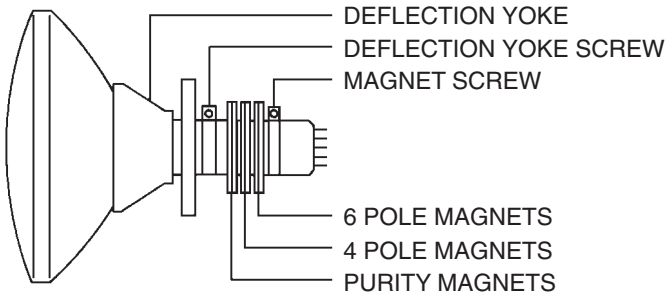


Fig. 3-1

3-3: STATIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 3-2.

1. Receive the crosshatch pattern from the color bar generator.
2. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
3. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.

3-4: DYNAMIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 3-3.

1. Adjust the differences around the screen by moving the deflection yoke upward/downward and right/left.
   (Refer to Fig. 3-2-a)
2. Insert three wedges between the deflection yoke and CRT funnel to fix the deflection yoke.
   (Refer to Fig. 3-2-b)

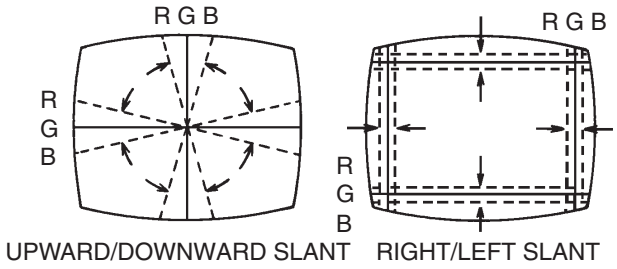


Fig. 3-2-a

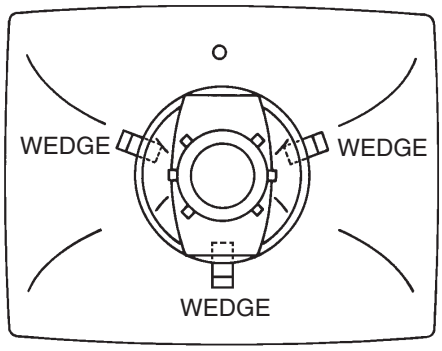
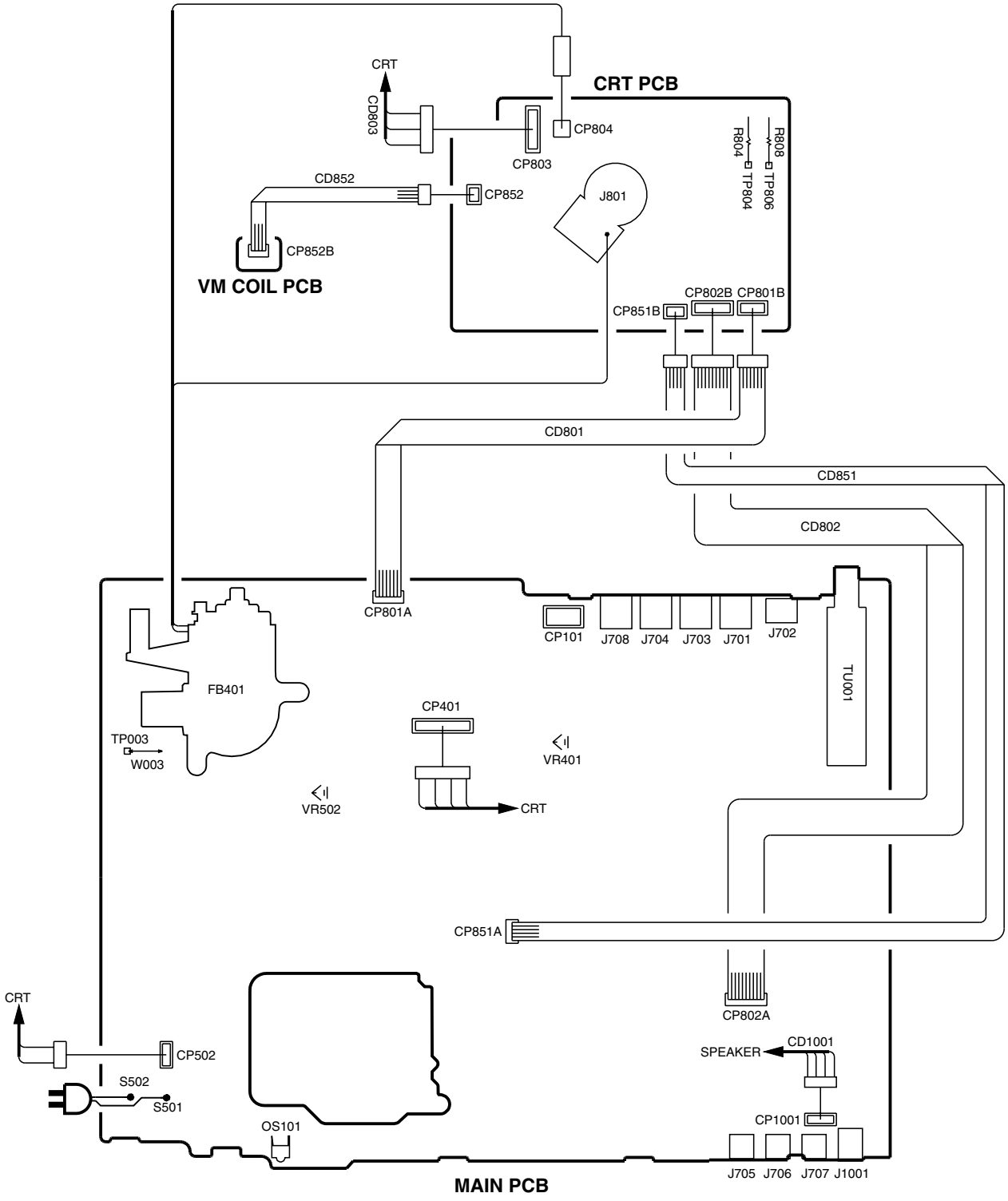


Fig. 3-2-b

4. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)



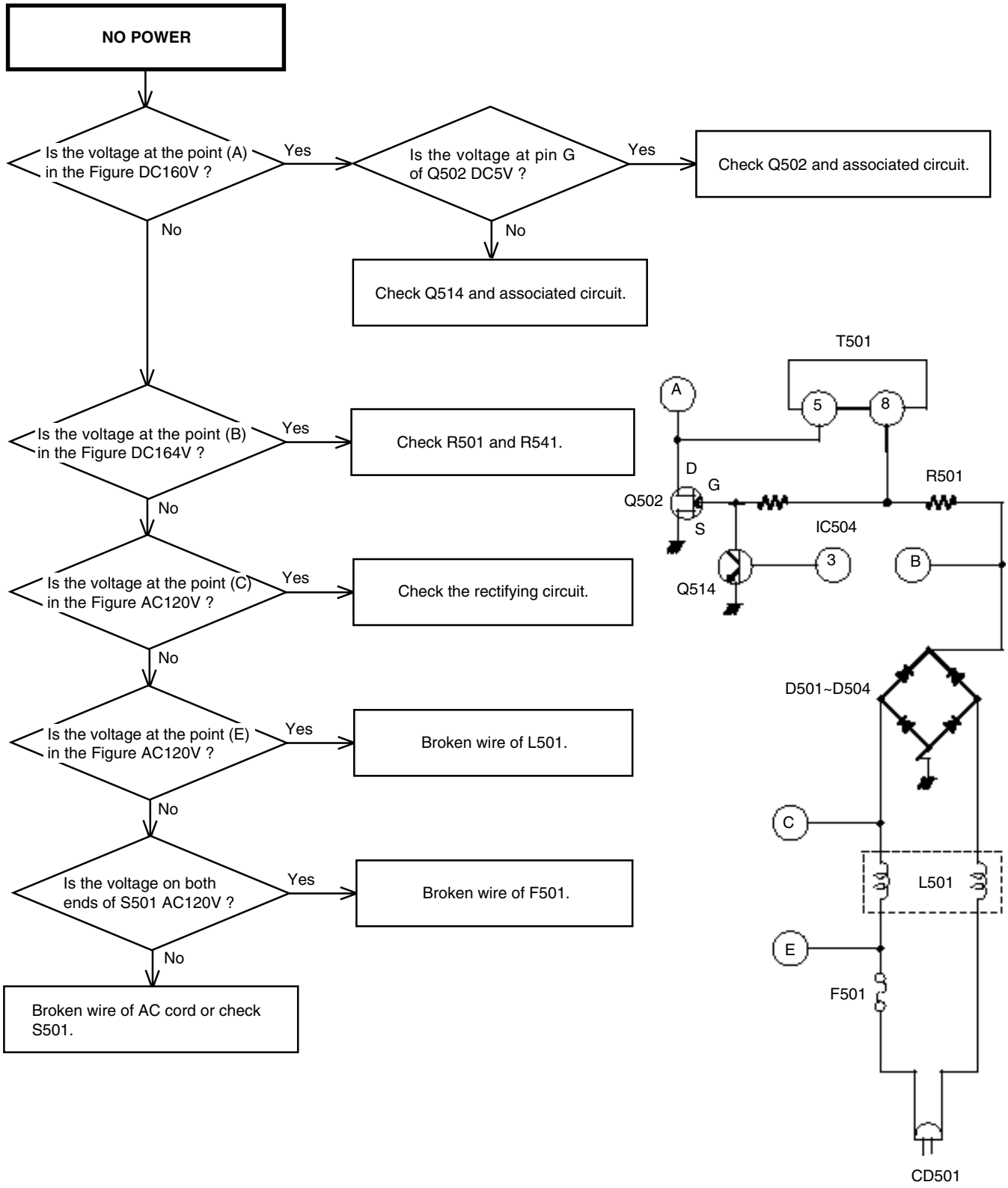
GUIDE FOR REPAIRING

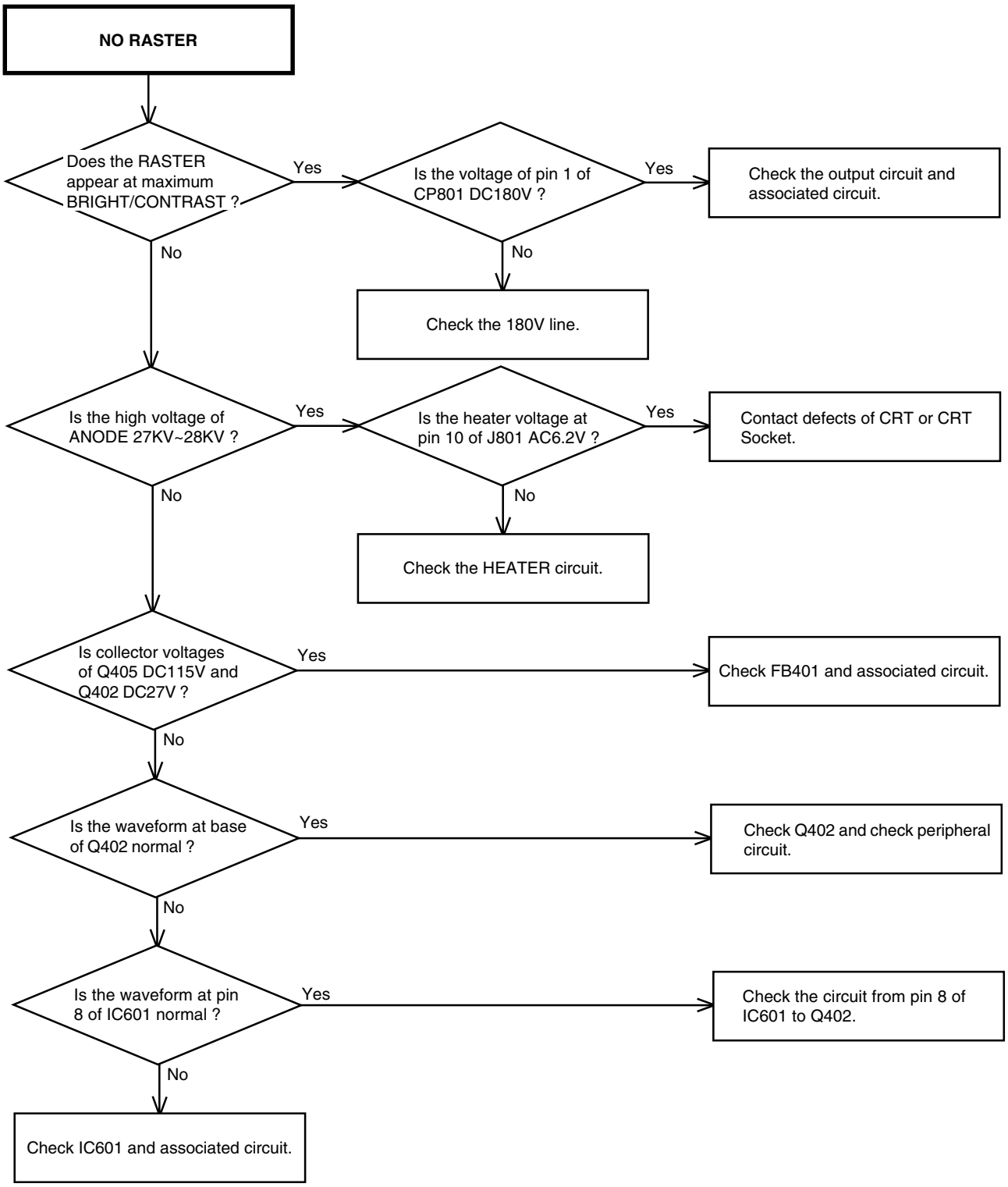
IC DESCRIPTION

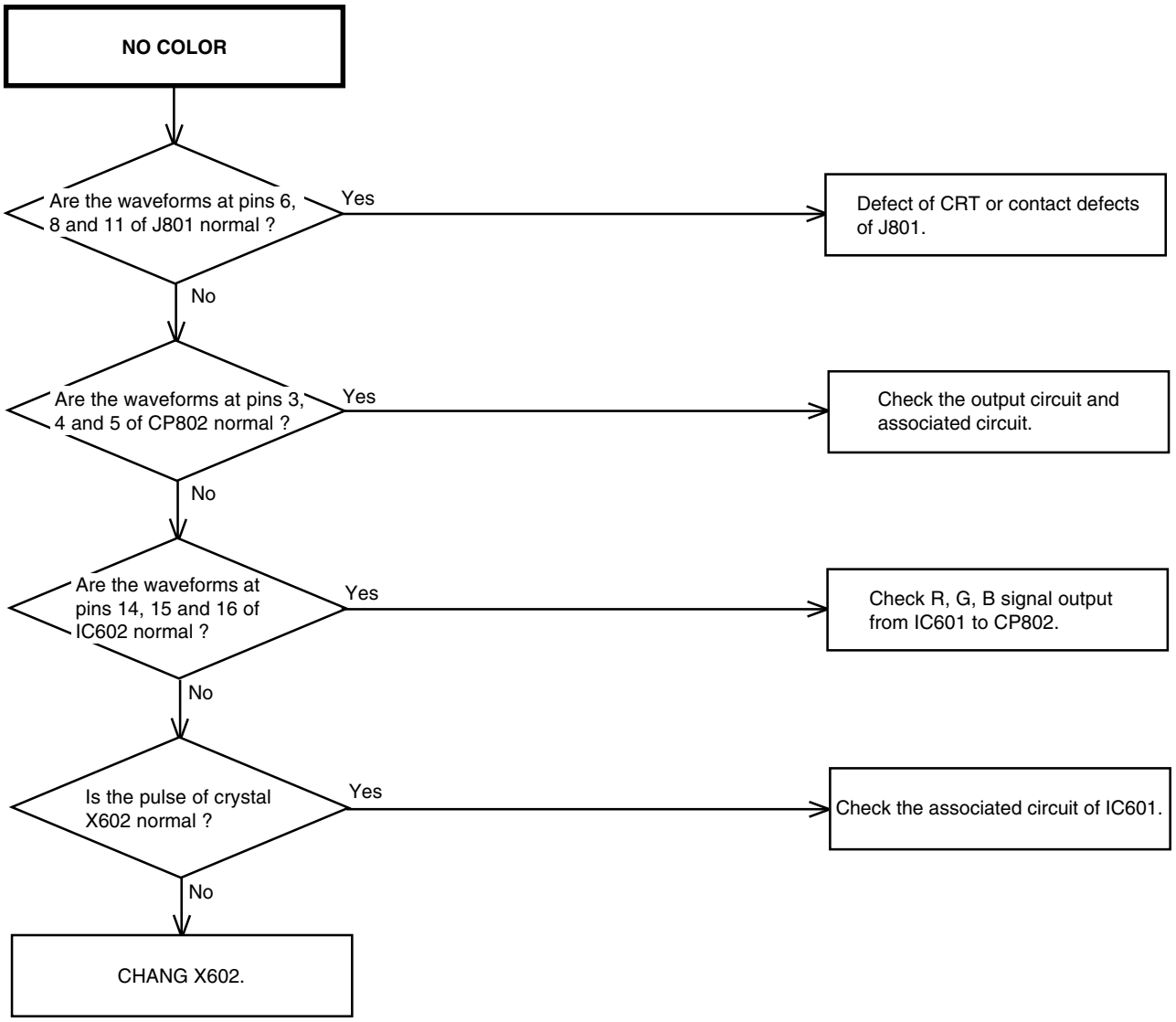
MAIN PCB OEC7093A (IC101)

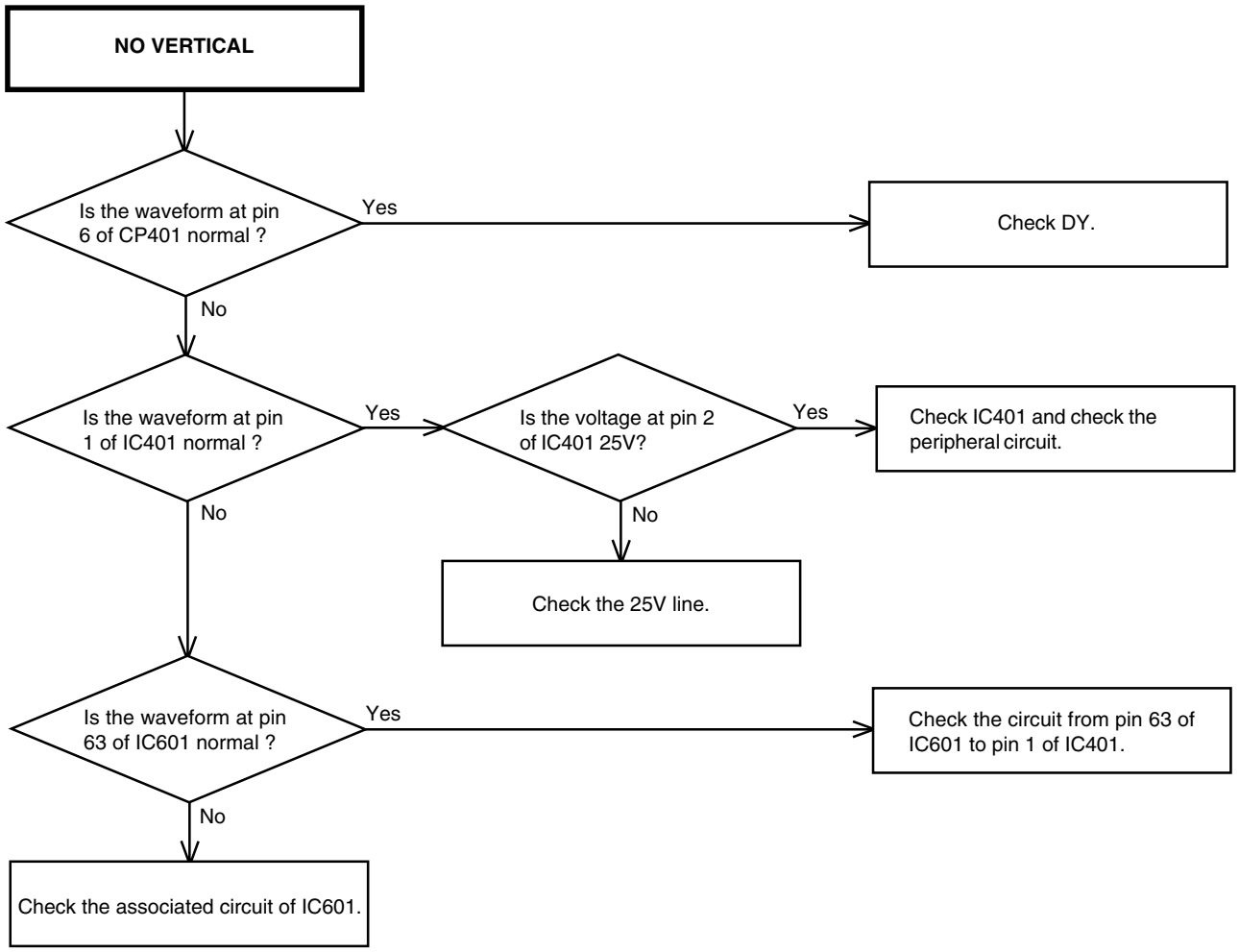
No.	Pin name	Symbol	I/O	Logic	Function	Option
1	P11/SCL1	AUDIO MUTE	O	0	Audio MUTE Output.	C-MOS
2	P00/PWM0	EXT MUTE	O	1	Audio MUTE Output for external Output.	Nch-OD
3	P01/PWM1	VOLUME	O	1	Volume PWM output.	Nch-OD
4	P02/PWM2	BBE-H	O		BBE Control Output.	Nch-OD
5	P03/PWM3/AD1	AFT	I		Voltage of tuning input.	Nch-OD
6	P04/PWM4/AD2	KEY1	I		Main unit key input.	Nch-OD
7	P05/AD3	KEY2	I		Main unit key input.	Nch-OD
8	P06/INT2/AD4	X-RAY	I		Input terminal of X-RAY detection.	Nch-OD
9	P07/INT1	REMOCON	I		Remote control input.	Nch-OD
10	P20/SCLK/AD5	ON TIME LED	O		ON-TIMER LED control output.	C-MOS
11	P21/AOUT/AD6	S IN	I		S-connectio input.	C-MOS
12	P22/SIN/AD7	Y/C SW	O		External in select output.	C-MOS
13	P23/TIM3	AUDIO SW	O		Audio in select output.	C-MOS
14	P24/TIM2		O			C-MOS
15	P25/INT3	OPOWER FAIL	I	0	Power failure detector input.	C-MOS
16	P26/X CIN	DEGAUSS_H	O	1	Degauss output.	C-MOS
17	P27/X COUT	X-RAY_TEST	O	1	X-RAY detector input.	C-MOS
18	CNVSS	CNVSS			GND	
19	XIN	X in	I		Main Oscillation.	
20	XOUT	X out	O		Main Oscillation.	
21	VSS	VSS			GND	
22	VCC	VCC			5V	
23	FILT	FILT				
24	HLF	HLF	O		Filter of slicer.	
25	VHOLD	V.HOLD	I		Condenser of slicer.	
26	CVIN	CVIN	I		Video signal input.	
27	RESET	RESET	I	0	Reset signal input.	
28	FSCIN	(FSC IN)	I		(Main Clock Occurrence circuit input)	
29	PON CONT/P15	POWER	O	1	Power control output.	C-MOS
30	P31/SCL3	SCL1	O		Serial clock output. (IIC BUS)	C-MOS
31	P30/SDA3	SDA1	I/O		Serial data input/output.	C-MOS
32	CLK CONT/P10	(CLOCK CONT)	O		(Main Clock Request output)	C-MOS
33	P55/OUT	BRANK	O	1	BLANK Output for OSD/CCD.	C-MOS
34	P54/R	RED R	O	1	Red output of RGB image output.	C-MOS
35	P53/G	GREEN G	O	1	Green output of RGB image output.	C-MOS
36	P52/B	BLUE B	O	1	Blue output of RGB image output.	C-MOS
37	P51/VSYNC	V.SYNC	I	0	Vertical synchronization input.	
38	P50/HSYNC	H.SENC	I	0	Horizontal synchronization input.	
39	P16/AD8/TIM2	SYNC	I		Input terminal for H-SYNC.	C-MOS
40	P14/SDA2	IIC_OFF	I	0	Serial clock/data stop input.	C-MOS
41	P13/SDA1	PROTECT	O	1	Output HIGH at turning off a television.	C-MOS
42	P12/SCL2	H_CTL	O	1	Output HIGH at turning off a television.	C-MOS

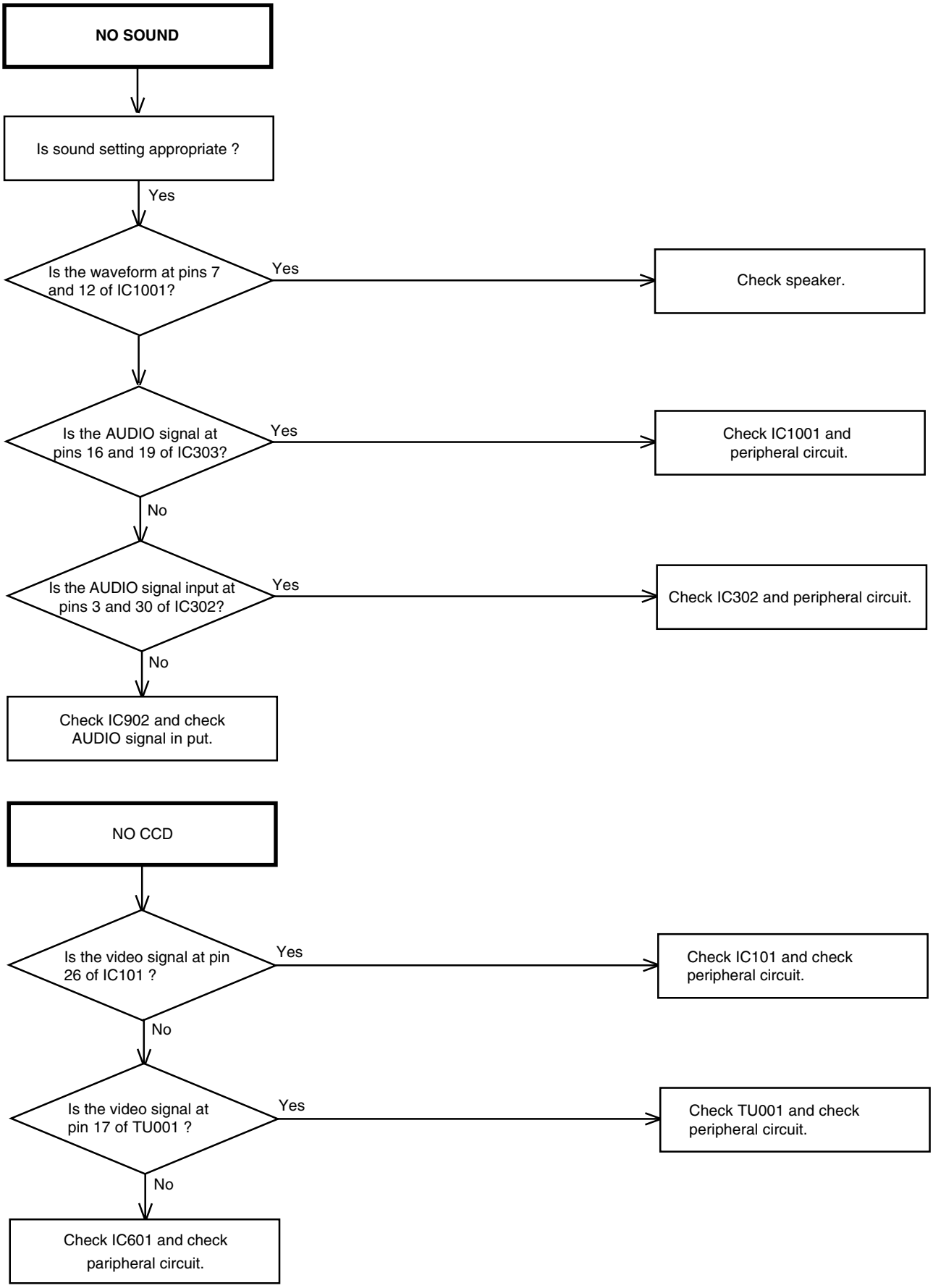
TROUBLESHOOTING GUIDE




NO RASTER
Does the RASTER appear at maximum BRIGHT/CONTRAST ?
Yes
Is the voltage of pin 1 of CP801 DC180V ?
Yes
Check the output circuit and associated circuit.
No
No
Check the 180V line.
Is the high voltage of ANODE 27KV~28KV ?
Yes
Is the heater voltage at pin 10 of J801 AC6.2V ?
Yes
Contact defects of CRT or CRT Socket.
No
No
Check the HEATER circuit.
Is collector voltages of Q405 DC115V and Q402 DC27V ?
Yes
Check FB401 and associated circuit.
No
Is the waveform at base of Q402 normal ?
Yes
Check Q402 and check peripheral circuit.
No
Is the waveform at pin 8 of IC601 normal ?
Yes
Check the circuit from pin 8 of IC601 to Q402.
No
Check IC601 and associated circuit.


NO COLOR
Are the waveforms at pins 6, 8 and 11 of J801 normal ?
Yes
Defect of CRT or contact defects of J801.
No
Are the waveforms at pins 3, 4 and 5 of CP802 normal ?
Yes
Check the output circuit and associated circuit.
No
Are the waveforms at pins 14, 15 and 16 of IC602 normal ?
Yes
Check R, G, B signal output from IC601 to CP802.
No
Is the pulse of crystal X602 normal ?
Yes
Check the associated circuit of IC601.
No
CHANG X602.


NO VERTICAL
Is the waveform at pin 6 of CP401 normal ?
Yes
Check DY.
No
Is the waveform at pin 1 of IC401 normal ?
Yes
Is the voltage at pin 2 of IC401 25V?
Yes
Check IC401 and check the peripheral circuit.
No
Check the 25V line.
No
Is the waveform at pin 63 of IC601 normal ?
Yes
Check the circuit from pin 63 of IC601 to pin 1 of IC401.
No
Check the associated circuit of IC601.


NO SOUND
Is sound setting appropriate ?
Yes
Is the waveform at pins 7 and 12 of IC1001?
Yes
Check speaker.
Is the AUDIO signal at pins 16 and 19 of IC303?
Yes
Check IC1001 and peripheral circuit.
No
Is the AUDIO signal input at pins 3 and 30 of IC302?
Yes
Check IC302 and peripheral circuit.
No
Check IC902 and check AUDIO signal in put.
NO CCD
Is the video signal at pin 26 of IC101 ?
Yes
Check IC101 and check peripheral circuit.
No
Is the video signal at pin 17 of TU001 ?
Yes
Check TU001 and check peripheral circuit.
No
Check IC601 and check paripheral circuit.

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JVC®

COLOR TELEVISION USER'S GUIDE

For models:
AV-24F704
AV-20F704
AV-14F704

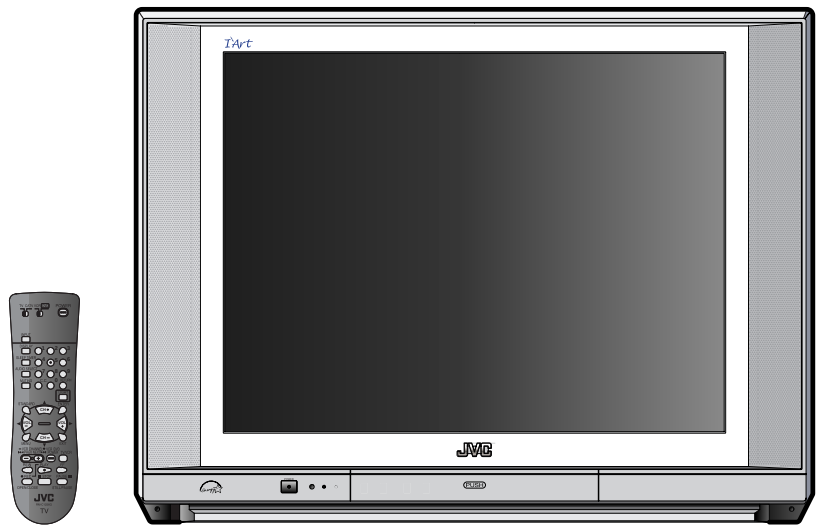


Illustration of AV-24F704 and RM-C1256G

IMPORTANT NOTE TO THE CUSTOMER:
In the space below, enter the serial number for your
television (located on the rear of the television cabinet).
Staple your sales receipt or invoice to the inside cover of this guide.
Keep this user's guide in a convenient place for future reference.
Keep the carton and original packaging for future use.

J3M80301A

Serial Number

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance with the FCC Rules could void the user's authority to operate this equipment.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.
CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS POLARIZED PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

IMPORTANT SAFEGUARDS

1. READ INSTRUCTIONS
All the safety and operating instructions should be read before the unit is operated.

2. RETAIN INSTRUCTIONS
The safety and operating instructions should be retained for future reference.

3. HEED WARNINGS
All warnings on the unit and in the operating instructions should be adhered to.

4. FOLLOW INSTRUCTIONS
All operating and use instructions should be followed.

5. CLEANING
Unplug this unit from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning the exterior cabinet only.

6. ATTACHMENTS
The manufacturer of this unit does not make any recommendations for attachments, as they may cause hazards.

7. WATER AND MOISTURE
Do not use this unit near water. For example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool.

8. ACCESSORIES
Do not place this unit on an unstable cart, stand, tripod, bracket, or table.
The unit may fall, causing serious injury, and serious damage to the unit.

PORTABLE CART WARNING
(symbol provided by RETAC)

S3126A

8A. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

9. VENTILATION
Slots and openings in the cabinet back or bottom are provided for ventilation, and to ensure reliable operation of the unit, and to protect it from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the unit on a bed, sofa, rug, or other similar surface. This unit should never be placed near or over a radiator or heat source. This unit should not be placed in a built-in installations such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

10. POWER SOURCE
This unit should be operated only from the type of power source indicated on the rating plate. If you are not sure of the type of power supply to your home, consult your appliance dealer or local power company. For units intended to operate from battery power, or other sources, refer to the operating instructions.

11. GROUNDING OR POLARIZATION
This unit is equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug, if your unit is equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This too, is a safety feature. If you are unable to insert the plug into the outlet, contacts your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.

12. POWER-CORD PROTECTION
Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

13. LIGHTNING

To protect your unit during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the unit due to lightning and power line surges.

14. POWER LINES

An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits, as contact with them might be fatal.

15. OVERLOADING

Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.

16. OBJECT AND LIQUID ENTRY

Do not push objects through any openings in this unit, as they may touch dangerous voltage points or short out parts that could result in fire or electric shock. Never spill or spray any type of liquid into the unit.

17. OUTDOOR ANTENNA GROUNDING

If an outside antenna or cable system is connected to the unit, be sure the antenna or cable system is grounded to provide some protection against voltage surges and built-up static charges, Section 810 of the National Electrical Code, ANSI/NFPA 70, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

18. SERVICING

Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

19. DAMAGE REQUIRING SERVICE

Unplug this unit from the wall outlet and refer servicing to qualified service personnel under the following conditions:

a. When the power-supply cord or plug is damaged.
b. If liquid has been spilled, or objects have fallen into the unit.
c . If the unit has been exposed to rain or water.
d. If the unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions, as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the unit to its normal operation.
e. If the unit has been dropped or the cabinet has been damaged.
f . When the unit exhibits a distinct change in performance, this indicates a need for service.

20. REPLACEMENT PARTS

When replacement parts are required, be sure the service technician uses replacement parts specified by the manufacturer or those that have the same characteristics as the original part.

Unauthorized substitutions may result in fire, electric shock or other hazards.

21. SAFETY CHECK

Upon completion of any service or repairs to this unit, ask the service technician to perform safety checks to determine that the unit is in proper operating condition.

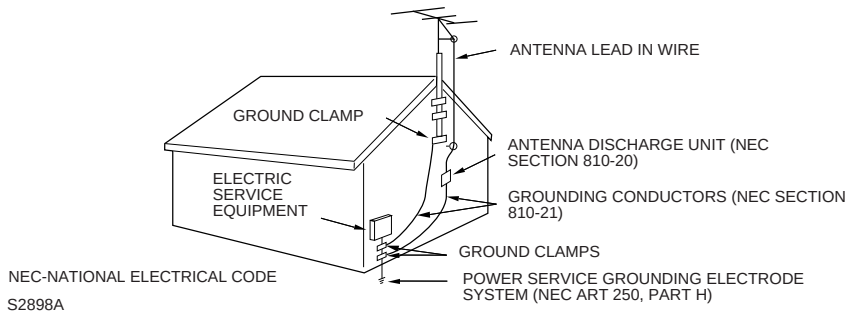
22. HEAT

The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

23. NOTE TO CATV SYSTEM INSTALLER

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

EXAMPLE OF ANTENNA GROUNDING AS PER THE NATIONAL ELECTRICAL CODE


ANTENNA LEAD IN WIRE
GROUND CLAMP
ANTENNA DISCHARGE UNIT (NEC SECTION 810-20)
ELECTRIC SERVICE EQUIPMENT
GROUNDING CONDUCTORS (NEC SECTION 810-21)
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (NEC ART 250, PART H)
NEC-NATIONAL ELECTRICAL CODE
S2898A

ENERGY STAR

• As an “ENERGY STAR®” partner, JVC has determined that this product or product model meets the “ENERGY STAR®” guidelines for energy efficiency.

IMPORTANT RECYCLING INFORMATION

This product utilizes both a Cathode Ray Tube (CRT) and other components that contain lead. Disposal of these materials may be regulated in your community due to environmental considerations. For disposal or recycling information, please contact your local authorities, or the Electronic Industries Alliance: http://www.eiae.org

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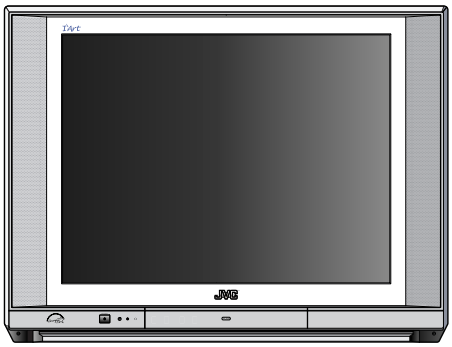
FEATURES

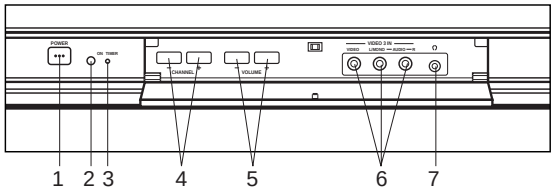
- **Flat Picture Tube -** It reduces the influence of surrounding light resulting in outstanding image detail and clarity.
- **181 Channel Tuner -** The tuning system is capable of receiving all 68 VHF/UHF standard broadcast channels that are available in your area. When operating on a cable system, it can tune to the standard VHF channel frequencies plus up to 113 cable channel frequencies. The actual number of channels received depends upon channel reception in your area or your cable system.
- **On-Screen 3 Language Display -** Consists of channel, sleep timer, volume level, muting, text/caption indicators and picture control adjustments. These can be displayed in English, Spanish or French.
- **ON/OFF Timer -** Allows you to automatically turn on or off your TV at a set time.
- **Sleep Timer -** Operable from the remote control, this TV can be programmed up to 120 minutes to turn off automatically.
- **V-Chip -** The V-Chip function can read the rating of a TV program or movie content if the program is encoded with this information. The V-Chip will allow you to set a restriction level.
- **Picture Control Adjustments -** The On-Screen display allows precise remote control adjustment of BRIGHTNESS, COLOR, CONTRAST, SHARPNESS, TINT and COMPONENT.
- **Closed Captioned Decoder -** Displays text captions or 1/2 of full screen text on the screen for hearing impaired viewers.
- **Stereo/SAP Reception -** This TV is designed to receive stereo and separate audio program (SAP) broadcasts where available.
- **Video Input Jacks -** This unit is equipped 3 types of video input jacks. The component video in jacks and S-video in jack enable you to watch the DVD player or the video devices with high quality picture.
- **Remote Control -** You can operate your VCR, Cable Box, Satellite Dish and DVD after you have registered the 3-digit codes for their brand name.

LOCATION OF CONTROLS

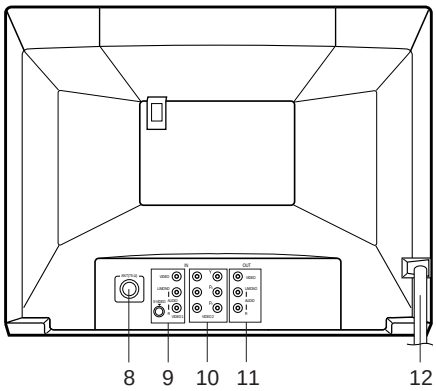
Illustration of AV-24F704

FRONT

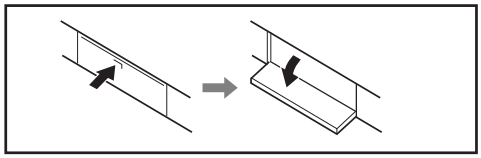




BACK

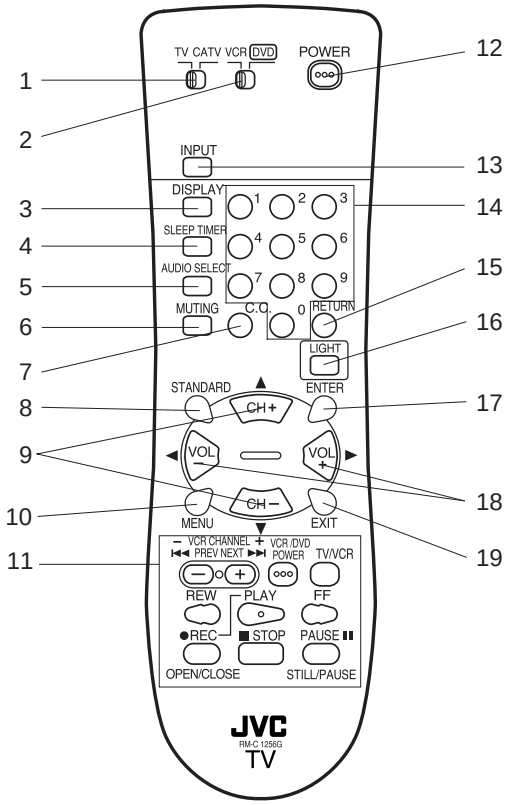


HOW TO OPEN THE FRONT DOOR



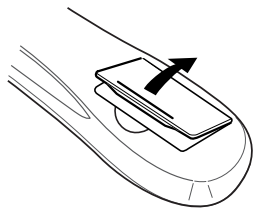
1. **POWER Button -** Press to turn the TV on or off.
2. **Remote Sensor -** Signals from the Remote Control unit are received here.
3. **ON TIMER Indicator -** This indicator lights up when the powered up. It also lights up when ON TIMER program is turned ON while power is OFF.
4. **CHANNEL +/– Buttons -** Press to select a higher or lower numbered channel set into memory.
5. **VOLUME +/– Buttons -** Press to raise or lower the volume of the sound.
6. **VIDEO 3 IN Jacks (Front) -** Audio and video signal cables from an external source can be connected here.
7. **HEADPHONES JACK -** Plug an earphone or headphones with an 1/8 miniplug into this jack for listening.
8. **VHF/UHF IN (ANT) Jack -** Connect a VHF/UHF antenna or CATV cable to this jack.
9. **VIDEO 1 IN Jacks (Rear) -** Audio and video signal cables from an external source (ex. VCR) can be connected here. If your video device has S-video out jack, connect to S-video in jack.
10. **VIDEO 2 IN Jacks -** Audio and video signal cables from an external source (ex. DVD) can be connected here.
    If you have a DVD with component video out jacks, connect to the component video in jacks. If you have a video device without the component video out, connect to video in jack.
11. **REAR AUDIO (L / R) /VIDEO OUT Jacks -** Used to output audio and video signals to a TV, amplifier or VCR.
    NOTE: This video out jack does not output the signal from component video in jacks.
12. **AC Power Cord -** Connect to a 120V, 60Hz outlet.

REMOTE CONTROL

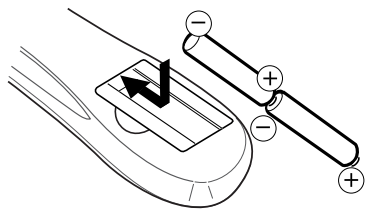


BATTERY INSTALLATION

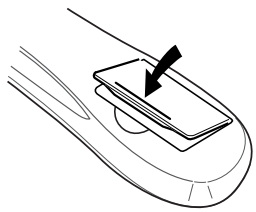
1. Open the battery compartment cover.



2. Install two “AA” batteries.



3. Replace the battery compartment cover.



1. **TV/CATV Switch -** Used to select the TV or Cable Box to be operated. (You can operate your cable box after you have programed the remote control.)
2. **VCR/DVD switch -** Used to select the VCR or DVD to be operated. (You can operate your VCR or DVD after you have programed the remote control.)
3. **DISPLAY Button -** Displays the current status time, channel (or Input), the present settings on the TV screen.
4. **SLEEP TIMER Button -** Sets the TV to turn off automatically after up to 120 minutes.
5. **AUDIO SELECT Button -** Switches sound between mono and stereo, and SAP when receiving broadcasts in stereo or SAP.
6. **MUTING Button -** Press to turn off the sound. Press again to turn the sound back on.
7. **C.C. (Closed Caption) Button -** Switches between Caption, Text and TV modes for Closed-Captioned programs.
8. **STANDARD Button -** Press to reset the On-Screen picture adjustments or Audio adjustment to their factory preset positions.
9. **CH +/– Buttons -** Press the + button to change to a higher numbered channel set into memory. Press the – button to change to a lower numbered channel set into memory. Press to select the desired item during On-Screen operations.
10. **MENU Button -** Press to display the On-Screen menu function.
11. **VCR or DVD Operation Buttons -** Press to operate your VCR or DVD.
12. **POWER Button -** Press to turn the TV on or off.
13. **INPUT Button -** Switches between the TV and external input sources.
14. **10-key pad -** Allows direct access to any channel of the TV, VCR or Cable box.
15. **RETURN Button -** Switches between the present channel and the last channel selected.
16. **LIGHT Button -** Press to turn the illumination on for CH +/– and VOL +/– buttons.
17. **ENTER Button -** Press to enter selected setup.
18. **VOL +/– Buttons -** Press the + button to increase, or the – button to decrease the volume level. Press to select the desired setting or arrangement during On-Screen operations.
19. **EXIT Button -** Press to exit the On-Screen menu function.

REMOTE CONTROL BASICS

- Before you can operate the remote control, you must first install the batteries (included). See “Changing the Batteries” on this page above for instructions. (For an illustration, please see page 6.)
- Press the POWER button to turn the television on or off.
- Make sure the TV/CATV switch is set to TV. Move the switch to CATV only if you need to operate a cable box.
- Slide the VCR/DVD selector switch to VCR to control a VCR, slide to DVD to control a DVD player. Please see pages 8 to 10 for instructions on programming your remote control to operate a Cable box, VCR or DVD player.
- Press the CH + and CH – buttons to scan through the channels. Tap the CH + or CH – button to move through the channels one channel at a time.
- Press VOL + or VOL – to raise or lower the volume. An indicator bar will appear on screen to show you the television volume level.
- The CH +/– and VOL +/– buttons are also used to navigate JVC’s on screen menu system.
- You can directly access specific channels using the 10-key pad.
- This remote includes illuminated buttons for key features like CH +/– buttons, and VOL +/– buttons. Press the LIGHT button to turn the illumination on.

CHANGING THE BATTERIES

Push down on the remote’s back cover and slide towards the bottom to remove it.
Insert two AA batteries (supplied), carefully noting the “+” and “–” markings on the batteries and on the remote control. To avoid a potential short circuit, insert the “–” end first.
Be sure to use only size AA batteries.
When batteries are installed, slide the cover back into place (until it clicks into position).

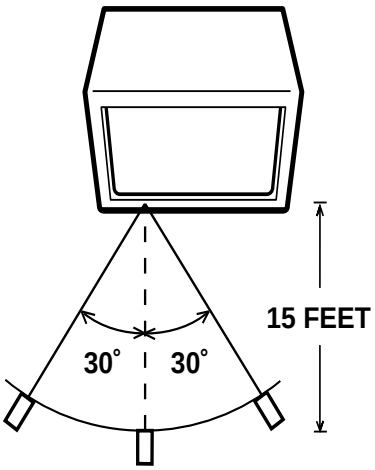
- If the remote control acts erratically, replace the batteries. Typical battery life is six months to one year. We recommend using alkaline batteries for longer battery life.
  When you change the batteries, try to complete the task within three minutes. If you take longer than three minutes, the remote control codes for your VCR, DVD, and/or Cable Box may have to be reset (pages 8-10).

BATTERY PRECAUTIONS

The precautions below should be followed when using batteries in this device:

1. Use only the size and type of batteries specified.
2. Be sure to follow the correct polarity when installing the batteries as indicated in the battery compartment. Reversed batteries may cause damage to the device. To avoid a potential short circuit, insert the “–” end first.
3. Do not mix different types of batteries together (e.g. Alkaline and Carbon-zinc) or old batteries with fresh ones.
4. If the device is not to be used for a long period of time, remove the batteries to prevent damage or injury from possible battery leakage.
5. Do not try to recharge batteries not intended to be recharged; they can overheat and rupture. (Follow battery manufacturer’s directions.)
6. When you change the batteries, try to complete the task within three minutes. If you take longer than three minutes, the remote control codes for your Cable Box may have to be reset (see page 8).

EFFECTIVE DISTANCE OF THE REMOTE CONTROL TRANSMITTER



NOTES:
- When there is an obstacle between the TV and the transmitter, the transmitter may not operate.
- When direct sunlight, an incandescent lamp, fluorescent lamp or any other strong light shines on the Remote sensor of the TV, the remote operation may be unstable.

REMOTE PROGRAMMING

Setting the CATV, VCR and DVD Codes

You can program your remote to operate your cable box, satellite receiver, VCR or DVD player by using the instructions and codes listed below. If the equipment does not respond to any of the codes listed below or to the code search function, use the remote control supplied by the manufacturer.

Cable Box or Satellite setup

The remote control is programmed with CATV and/or Satellite codes for power on, power off, channel up, channel down, and 10 key operation.

1) Find the CATV/Satellite brand from the list of codes shown below.
2) Slide the 2-way selector switch to “CATV”.
3) Press and hold down the DISPLAY button.
4) With the DISPLAY button held down, enter the first code number listed using the 10 key pad.
5) Release the DISPLAY button.
6) Confirm the operation of the Cable Box/Satellite receiver.

- If your CATV or Satellite box does not respond to the first code, try the others listed. If it does not respond to any code, try the Search Codes Function as shown below.

Cable Box	CODES	Cable Box	CODES
ABC	024	Pulsar	051, 032
Archer	032, 025	Puser	032
Cableview	051, 032	RCA	061, 070
Citizen	022, 051	Realistic	032
Curtis	058, 059	Regal	058, 064, 040, 041, 042, 045, 068
Diamond	024, 032, 025	Regency	034
Eagle	029	Rembrandt	037, 032, 051, 038
Eastern	034	Samsung	051
GC Brand	032, 051	Scientific Atlanta	057, 058, 059
Gemini	022, 043	SLMark	051, 047
General Instrument	065, 024, 025, 026, 027, 020, 021, 022, 057, 023	Sprucer	051, 056
Hamlin	040, 041, 042, 045, 058, 064	Stargate	032, 051
Hitachi	049, 024	Telecaption	067
Jerrold	065, 024, 025, 026, 027, 020,021, 022, 057, 023	Teleview	047, 051
Macom	049, 050, 051, 054	Texscan	044
Magnavox	033	Tocom	035, 036, 066
Memorex	030	Toshiba	050
Movietime	032, 051	Unika	032, 025
Oak	039, 037, 048	Universal	022, 032
Panasonic	055, 056, 060, 071	Videoway	052
Paragon	063	Viewstar	029, 030
Philips	028, 029, 030, 052, 053, 031, 069	Zenith	063, 046
Pioneer	047, 062	Zenith/Drake Satellite	046

Digital Satellite Systems	CODES	Digital Satellite Systems	CODES
Echostar	100, 113, 114	Philips	102, 103
Express VU	100, 113	Primestar	108
G.E.	106	Proscan	106, 109, 110
G.I.	108	RCA	106, 109, 110
Gradiente	112	Sony	107
Hitachi	104, 111	Star Choice	104, 108
HNS (Hughes)	104	Toshiba	101
Pranasonic	105	Uniden	102, 103

Cable/Satellite Search Codes Function:

1) Slide the 2-Way Mode Selector switch to CATV.
2) Press the TV POWER and RETURN buttons. Hold for at least three seconds and release.
3) Press TV POWER, see if the CATV or Satellite box responds.
4) If there was a response, press RETURN. The operating codes are now set. If there was no response, repeat Step 3. If you repeat Step 3 a total of 52 times without a response, use the remote control which came with the equipment.
5) Press RETURN to exit.

VCR setup

The remote control is programmed with VCR codes for power on, power off, play, stop, fast-forward, rewind, pause, record, channel up, and channel down operation.

1) Find the VCR brand from the list of codes shown below.
2) Slide the first 2-way selector switch to “TV” and the other 2-way selector switch to “VCR”.
3) Press and hold down the DISPLAY button.
4) With the DISPLAY button held down, enter the first code number listed with the 10 key pad.
5) Release the DISPLAY button.
6) Confirm the operation of the VCR.

- If your VCR does not respond to the first code, try the others listed. If it does not respond to any code, try the Search Codes Function as shown below.
- Some manufacturer’s VCR’s may not respond to the TV/VCR button, even if other buttons work properly.
- To record, hold down the REC button on the remote and press PLAY.

VCRs	CODES	VCRs	CODES
Admiral	035	Optimus	028, 021, 035, 064
Aiwa	027, 032, 095	Orion	026, 020
Akai	029, 072, 073, 074	Panasonic	023, 024, 021, 022
Audio Dynamic	003, 005	Penney	024, 058, 045, 063, 003, 004, 005, 093
Bell & Howell	063, 071	Pentax	058, 005, 045, 093
Broksonic	020, 026, 094	Philco	031, 024, 027, 023, 026, 020, 043
Canon	023, 025	Philips	031, 023, 024, 086
CCE	043	Pioneer	023
Citizen	064	Proscan	045, 058, 023, 024, 031, 046, 059, 060, 033, 087, 093
Craig	063, 029, 064	Quasar	021, 022, 023, 024
Curtis Mathes	045, 024, 027, 093	Radio Shack	033, 024, 063, 036, 067, 040, 027
Daewoo	043, 059, 024, 092	RCA	033,045,058,023,024,031,046,059,060,083,084,085,087,093
DBX	003, 004, 005	Realistic	024, 063, 036, 067, 040, 027
Dimensia	045, 093	Samsung	037, 060, 062,033, 089
Emerson	043, 026, 077, 061, 025, 042, 020, 076	Samtron	089
Fisher	063, 066, 067, 065, 071, 091	Sansui	003, 026, 020, 052
Funai	027, 026, 020, 000	Sanyo	063, 067, 091, 071
G.E.	033, 045, 024	Scott	059, 060, 062, 067, 038, 040, 047, 048, 026, 020
Go Video	037, 051, 049, 050, 089	Sears	063, 064, 065, 066, 058, 000, 001
Goldstar	064	Shintom	075
Gradiente	083, 084, 081, 000, 001	Sharp	035, 036, 080,088
Hitachi	023, 045, 058, 027, 081, 093	Signature 2000	027, 035
Instant Replay	024, 023	Singer	075
Jensen	003	Sony	028, 029, 030, 053, 054, 055
JVC	000, 001, 002, 003, 004, 005	SV 2000	027
Kenwood	003, 004, 064, 005	Sylvania	031, 023, 024, 027
LXI	027, 064, 058, 065, 066, 063, 067	Symphonic	027, 081
Magnavox	031, 023, 024, 086	Tashiro	064
Marantz	003, 004, 005	Tatung	003, 004, 005
Marta	064	Teac	003, 004, 027, 005
Memorex	024, 067	Technics	021, 022, 023, 024
MGA	038, 040, 047, 048, 041, 042	Teknika	024, 027, 070
Minolta	058, 045, 093	Toshiba	059, 046, 079
Mitsubishi	038, 040, 047, 048, 041, 042, 078, 090	Vector Research	005
Multitech	047, 027, 062	Wards	035, 036, 067, 044, 064
NEC	003, 004, 005, 000	Yamaha	063, 003, 004, 005
Olympic	024, 023	Zenith	044, 082, 064, 094

VCR Search Codes Function:

1) Slide the first 2-way selector switch to “TV” and the other 2-way selector switch to “VCR”.
2) Press the VCR POWER and RETURN buttons. Hold for at least three seconds and release.
3) Press VCR POWER, see if the VCR responds.
4) If there was a response, press RETURN. The operating codes are now set. If there was no response, repeat Step 3. If you repeat Step 3 a total of 80 times without a response, use the manufacturers remote control which came with the VCR.
5) Press RETURN to exit.

DVD setup

The remote control is programmed with DVD codes for power on, power off, play, stop, fast-forward, rewind, previous chapter, next chapter, tray open/close, and still/pause operation.

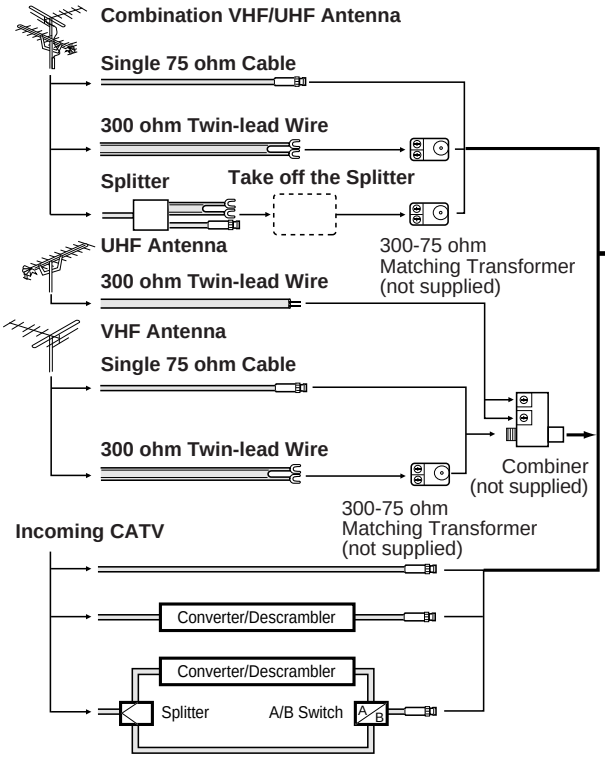
1) Find the DVD player brand from the list of codes shown below.
2) Slide the first 2-way selector switch to “TV” and the other 2-way selector switch to “DVD”.
3) Press and hold down the DISPLAY button.
4) With the DISPLAY button held down, enter the first code number listed with the 10 key pad.
5) Release the DISPLAY button.
6) Confirm the operation of the DVD player.
   - If your DVD player does not respond to the first code, try the others listed. If it does not respond to any code, try the Search Codes Function as shown below.
   - After you program your remote, some DVD buttons may not work properly. If some buttons do not work properly, use the remote control which came with your DVD player.

DVD Player	CODES	DVD Player	CODES
Aiwa	043	Raite	033
Apex	040	RCA	021, 026
Denon	020, 037	Sampo	034
Hitachi	030, 031	Samsung	030
JVC	000	Sharp	028
Kenwood	035	Silvania	038
Konka	039	Sony	024, 045, 046, 047
Mitsubishi	025	Technics	020
Onkyo	041	Toshiba	023
Oritron	044	Wave	042
Panasonic	020	Yamaha	020
Philips	023, 036	Zenith	027, 032
Pioneer	022		

DVD Player Search Codes Function:

1) Slide the first 2-way selector switch to “TV” and the other 2-way selector switch to “DVD”.
2) Press the DVD POWER and RETURN buttons. Hold for at least three seconds and release.
3) Press DVD POWER, see if the DVD player responds.
4) If there was a response, press RETURN. The operating codes are now set. If there was no response, repeat Step 3. If you repeat Step 3 a total of 30 times without a response, use the manufacturers remote control which came with the DVD player.
5) Press RETURN to exit.

ANTENNA/CATV CONNECTIONS



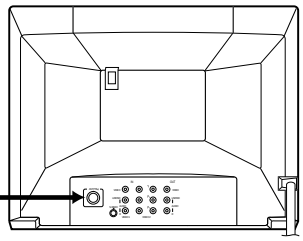


Illustration of AV-24F704

This television has an extended tuning range and can tune most cable channels without using a cable company supplied converter box. Some cable companies offer “premium pay channels” in which the signal is scrambled. Descrambling these signals for normal viewing requires the use of a descrambler device which is generally provided by the cable company.

Combination VHF/UHF Antenna (Single 75 ohm Cable or 300 ohm Twin-lead Wire)
Connect the 75 ohm cable from a combination VHF/UHF antenna to the Antenna Jack. If your combination antenna has a 300 ohm Twin-lead Wire, use the 300-75 ohm Matching Transformer (not supplied).

Combination VHF/UHF Antenna (Separate VHF and UHF 300 ohm Twin-leads)
Connect the UHF Twin-lead Wire to a Combiner (not supplied). Connect the VHF Twin-lead to the 300-75 ohm Matching Transformer (not supplied). Attach the Transformer to the Combiner. Attach the Combiner to the Antenna Jack.

Separate VHF/UHF Antennas
Connect the 75 ohm Cable from the VHF antenna and the UHF antenna Twin-lead to a combiner (not supplied). Attach the Combiner to the Antenna Jack.
NOTE: If your VHF antenna has a Twin-lead Wire, use the 300-75 ohm Matching Transformer (not supplied), then connect the Transformer to the Combiner.

For Subscribers to Basic Cable TV Service
For basic cable service not requiring a Converter/Descrambler box, connect the CATV 75 ohm Coaxial Cable directly to the Antenna Jack on the back of the television.

For Subscribers to Scrambled Cable TV Service
If you subscribe to a cable service which requires the use of a Converter/Descrambler box, connect the incoming cable to the Converter/Descrambler box and connect the output of the box to the Antenna Jack on the back of the television. Follow the connections shown left. Set the television to the output of the Converter/Descrambler box (usually channel 3 or 4) and use the Converter/Descrambler box to select channels.

For Subscribers to Unscrambled Basic Cable with Scrambled Premium Channels
If you subscribe to a cable service in which basic cable channels are unscrambled and premium channels require the use of a Converter/Descrambler box, you may wish to use a two-set signal splitter (sometimes called a “two-set coupler”) and an A/B Switch box from the cable installer or an electronics supply store. Follow the connections shown left. With the switch in the “B” position, you can directly tune any nonscrambled channels on your TV. With the switch in the “A” position, tune your TV to the output of the Converter/Descrambler box (usually channel 3 or 4) and use the box to tune scrambled channels.

CONNECTION TO OTHER EQUIPMENT

The exact arrangement you use to interconnect various video and audio components to the TV is dependent on the model and features of each component. Check the User's Guide provided with each component for the location of video and audio inputs and outputs.

The connection diagrams in the following are offered as suggestions. You may need to modify them to accommodate your particular assortment of components. The diagrams are intended to show component video and audio interconnections only.

Press the INPUT button to select the AV mode to use the TV as a monitor.
Operate your VCR as usual.

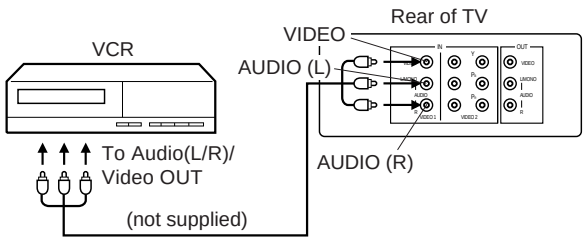
TV/AV SELECTION

If you connect the TV to VCR, camcorder, TV game or DVD you can select by pressing the INPUT button.

Press the INPUT button repeatedly to select the desired mode.

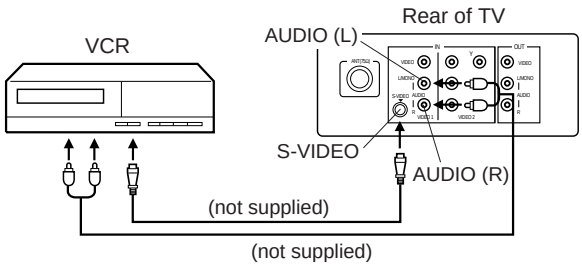
An indication of input source will display on the screen for 4 seconds.

1. To connect the TV to a VCR
(ex. Use VIDEO 1 IN jacks to connect it.)



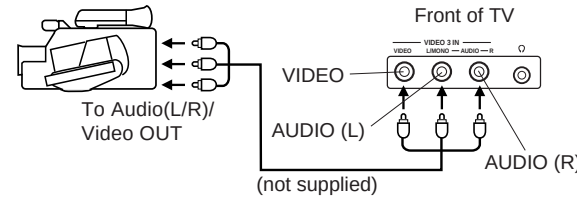
- Select "VIDEO 1" by pressing the INPUT button to display the VCR picture.

2. To connect the TV to a VCR with an S-VIDEO jack
If you connect a VCR with an S-video jack to the S-VIDEO jack on the rear of TV, you must also connect the audio cables to the AUDIO IN (VIDEO 1) jacks on the rear of the TV. The S-video cable only carries the video signal. Audio signal is separate.



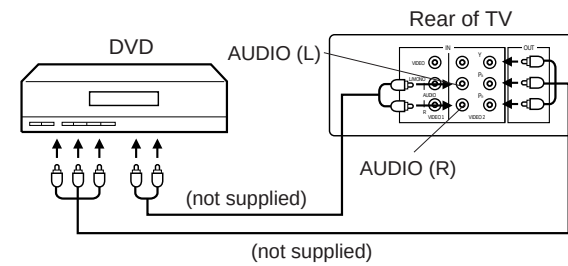
NOTE: When the S-video cable and the video cable are connected to each jack at the same time, the S-video cable takes precedence over the video cable.

3. To connect the TV to a camcorder
To playback from the camcorder, connect the camcorder to the TV as shown.



- Select "VIDEO 3" by pressing the INPUT button to display the camcorder picture.

4. To connect the TV to a DVD with COMPONENT VIDEO OUT Jacks.
If you connect a DVD with the COMPONENT VIDEO OUT jacks to the COMPONENT VIDEO IN (Y, PB, PR) jacks on the rear of TV, you must also connect the audio cables to the AUDIO IN (VIDEO 2 IN) jacks on the rear of the TV.



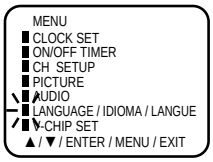
- Select "COMPONENT" by pressing the INPUT button to display the DVD picture.
- If you have a DVD without COMPONENT VIDEO OUT jacks, connect the video cable to VIDEO IN (VIDEO 2 IN) jack. In this case, select "VIDEO 2" by pressing the INPUT button to display the DVD picture.

SETTING LANGUAGE

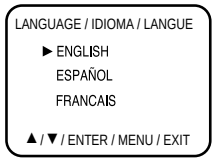
This TV can display the channel number, on-screen displays and picture adjustments on the screen in English, Spanish or French.
On-screen language selection (step 3) will automatically appear on the screen when you press the MENU button initially. Select the language you prefer first, then proceed with the other menu options.

1 Press the MENU button.

2 Press the CH + (▲) or – (▼) button to select the LANGUAGE mode, then press the ENTER button.



3 Press the CH + (▲) or – (▼) button until the " ► " indicator points to the desired language: English (ENGLISH), Spanish (ESPAÑOL) or French (FRANCAIS), then press the ENTER button.



4 Press the EXIT button.

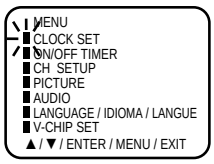
NOTE:
If Spanish or French is chosen, the Closed Caption indicators will be in the selected language, but the Closed Caption text will not be affected by the language selection.

SETTING CLOCK

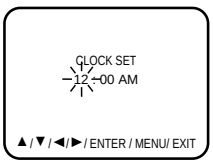
You must set the time manually for DISPLAY and ON/OFF TIMER.

1 Press the MENU button.

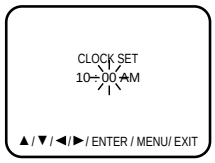
2 Press the CH + (▲) or CH – (▼) button until the indicator next to "CLOCK SET" begins to flash, then Press the ENTER button.



3 Press the CH + (▲) or CH – (▼) button to set the hour, then press the VOL + (▶) button.



4 Press the CH + (▲) or CH – (▼) button to set the minute.



5 Press the EXIT button.

NOTES:
- After a power failure or disconnection of the power plug, the time display will be lost. In this case, set present time again.
- When you set the minute, you can change in 10-minutes by holding down the CH + (▲) or CH – (▼) button.

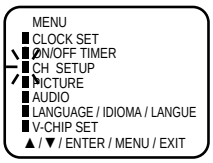
TO MEMORIZE CHANNELS

This TV is equipped with a channel memory feature which allows channels to skip up or down to the next channel set into memory, skipping over unwanted channels.
Before selecting channels, they must be programmed into the TV's memory. In addition to normal VHF and UHF channels, this TV can receive up to 113 Cable TV channels. To use this TV with an antenna, set the TV/CATV menu option to the TV setting. When shipped from the factory, this menu option is in the CATV setting.

TV/CATV SELECTION

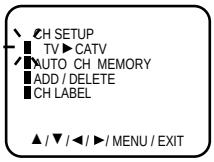
1. Press the MENU button.

2. Press the CH + (▲) or – (▼) button until the indicator next to "CH SETUP" begins to flash, then press the ENTER button.



3. Press the CH + (▲) or – (▼) button until the indicator next to "TV/CATV" begins to flash.

4. Press the VOL + (▶) or – (◀) button to select the "TV" or "CATV" mode. The arrow indicates the selected mode.



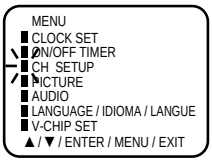
5. Press the EXIT button.

NOTE: Contact your cable company to determine the type of cable system used in your area.

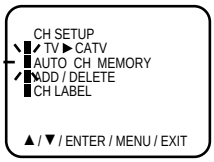
AUTOMATIC CHANNEL MEMORY

1. Press the MENU button.

2. Press the CH + (▲) or – (▼) button until the indicator next to "CH SETUP" begins to flash, then press the ENTER button.



3. Press the CH + (▲) or – (▼) button until the indicator next to "AUTO CH MEMORY" begins to flash, then press the ENTER button. The TV will begin memorizing all the channels available in your area.

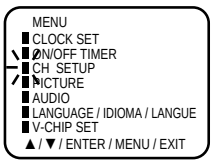


4. Press the EXIT button.

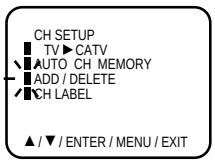
TO ADD/DELETE CHANNELS

1. Press the MENU button.

2. Press the CH + (▲) or – (▼) button until the indicator next to "CH SETUP" begins to flash, then press the ENTER button.



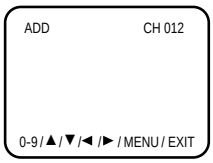
3. Press the CH + (▲) or – (▼) button until the indicator next to "ADD/DELETE" begins to flash, then press the ENTER button.



4. Select the desired channels to be added or deleted using the 10-key pad (0-9) or the CH + or – button.

5. Press the VOL + (▶) or – (◀) button to select "ADD" or "DELETE".
If an unmemorized channel was selected (step 4), the channel indication will be red. Press the VOL + (▶) or – (◀) button if you wish to ADD the unmemorized channel. The channel indicator will change from red to green when a channel is added and the channel will be memorized. If a memorized channel was selected (step 4), the channel indication will be green.

Press the VOL + (▶) or – (◀) button if you wish to DELETE the channel from memory. The channel indicator will change from green to red when a channel is deleted. Repeat Steps 4 and 5 for each channel to be added or deleted.



6. Press the EXIT button after adding or deleting all of the desired channels, to return to normal TV viewing.

TO MEMORIZE CHANNELS (CONTINUED)

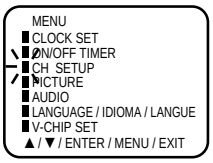
CH LABEL

You can labal every channel up to 4 characters.
Channel labels will appear over the channel number display each time you select a channel.

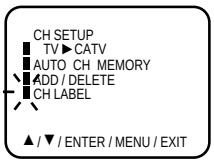
1 Select a channel you want to label by pressing the 10-key pad or CH + or – button.

2 Press the MENU button.

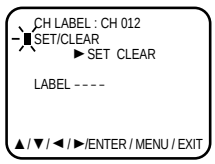
3 Press the CH + (▲) or – (▼) button until the indicator next to “CH SETUP” begins to flash, then press the ENTER button.



4 Press the CH + (▲) or – (▼) button until the indicator next to “CH LABEL” begins to flash, then press the ENTER button.

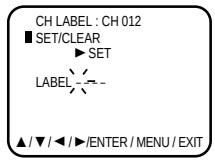


5 Press the VOL + (▶) or – (◀) button to select "SET" or “CLEAR”. Select “SET” in case you have a channel to label or change. Select “CLEAR” in case you have a channel to delete. Then press the ENTER button.



6 Go to step 7 when you select the “SET”.
Go to step 9 when you select the “CLEAR”.

7 Now the bar for the first space is flashing. Press the VOL + (▶) or – (◀) button to enter a character in the first space. Press the button repeatedly until the character you want appears on the screen. Then press the ENTER button.



NOTE:
The character will change as below.

– ⟷ 0 ⟷ ••• ⟷ 9 ⟷ A ⟷ •••
⟷ Z ⟷ SPACE ⟷ + ⟷ –

8 Repeat step 7 to enter the rest of the characters from second to fourth.

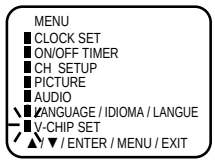
9 Press the ENTER button to register.

10 Press the EXIT button.

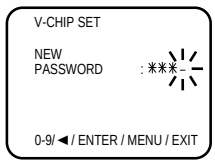
SETTING V-CHIP

This TV is fitted with a V-CHIP controller which provides you with channel viewing access controls and restrictions. This function is to prevent your children from watching violence or sexual scenes that may be harmful.

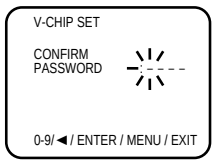
1 Press the MENU button and press the CH + (▲) or – (▼) button to select the “V-CHIP SET” option, then press the ENTER button.



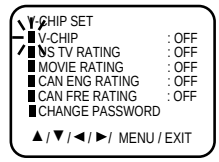
2 Enter your password (4 digits) using the 10-key pad (0-9). In the event of entering incorrect password press the VOL – (◀) button. Then press the ENTER button.
• After registration of password, step 3 will not appear.



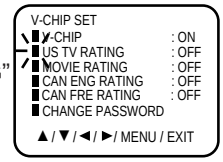
3 Enter the same password for confirmation, then press the ENTER button.



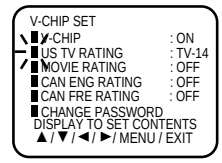
4 Press the CH + (▲) or – (▼) button to select the V-CHIP option.
Press the VOL + (▶) or – (◀) button to select the ON.



5 For U.S.:
Press the CH + (▲) or – (▼) button to select the “US TV RATING” or “MOVIE RATING” option.
For Canadian:
Press the CH + (▲) or – (▼) button to select the “CAN ENG RATING” or “CAN FRE RATING” option.



6 Press the VOL + (▶) or – (◀) button to select the desired rating for the applicable video or TV channel.



7 Press the EXIT button.

SETTING V-CHIP

for U.S:
TV RATING

VOL – (◀) ⟷ VOL + (▶)

OFF ↔ TV–Y ↔ TV-Y7 ↔ TV-G ↔ TV-PG ↔ TV-14 ↔ TV-MA

TV-Y	: all children	TV-PG	: parental guidance
TV-Y7	: 7 years old and above	TV-14	: 14 years old and above
TV-G	: childrens program	TV-MA	: 17 years old and above

When you select TV-Y7, TV-PG, TV-14 or TV-MA, press the DISPLAY button to explain the rating.
Press the CH + (▲) or – (▼) button to select the desired rating you want. Press the VOL + (▶) or – (◀) button to select the setting ON or OFF. If you want to back to V-CHIP SET menu, press the MENU button.

MOVIE RATING

VOL – (◀) ⟷ VOL + (▶)

OFF ↔ G ↔ PG ↔ PG-13 ↔ R ↔ NC-17 ↔ X

G	: all ages	R	: under 17 years old parental guidance suggested
PG	: parental guidance		
PG-13	: parental guidance less than 13 years old	NC-17	: 17 years old and above
		X	: adult only

for Canadian:
CAN ENG RATING

VOL – (◀) ⟷ VOL + (▶)

OFF ↔ E ↔ C ↔ C8+ ↔ G ↔ PG ↔ 14+ ↔ 18+

E : Exempt
C : Programming Intended for Children
C8+ : Programming Intended for Children 8 and Over
G : General Audience
PG : Parental Guidance
14+ : 14 Years and Older
18+ : Adult

CAN FRE RATING

VOL + (◀) ⟷ VOL – (▶)

OFF ↔ E ↔ G ↔ 8ans+ ↔ 13ans+ ↔ 16ans+ ↔ 18ans+

E : Exemptées.
G : Général.
8ans+ : Général-Déconseillé aux jeunes enfants.
13ans+ : Cette émission peut ne pas convenir aux enfants de moins de 13 ans.
16ans+ : Cette émission ne convient pas aux moins de 16 ans.
18ans+ : Cette émission est réservée aux adultes.

NOTES:

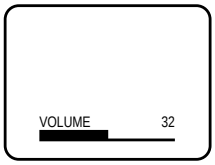
- If you want to change password, follow steps 1 and 2 and select “CHANGE PASSWORD” option then enter your new password.
- The V-Chip function is activated only on programs and tapes that have the rating signal.
- Once you block a program using the V-Chip function, the blocked program cannot be watched based on the content of the show. When the program starts, the “IF YOU CANCEL PROTECT, INPUT PASSWORD” will appear on the screen. When you want to release the V-Chip temporarily, enter the password.
  If you change the channel or turn off and on the TV while releasing the V-Chip temporarily, the V-Chip setting will be resumed.
- When you watch the TV from the cable box or the VCR with the RF Modulator, then you release the V-Chip temporarily, the V-Chip setting will not be resumed until you turn off the TV. The TV channel is not used in this case.
- When changing the channel with the cable box or the VCR, approximately 10 seconds will pass until the program appears.
- When you dislocated or lost the password, you can cancel the existing password by the following procedure:
  - Press VOLUME – button of main unit.
  - Keep pressing VOLUME – button of main unit and press “0” key of remote control simultaneously for a few seconds.

TV BASIC OPERATION

Before operate your TV select TV position of the TV/CATV switch on the remote to control the TV with the remote.

1 To turn on the TV, press the POWER button.

2 The VOLUME can be adjusted to a desired level by pressing the VOL (VOLUME) + or – button.
Adjust the volume level by pressing the VOLUME + or – button. The volume level will be indicated on the screen by green bar. As the volume level increases, so do the number of bar. If the volume decreases, the number of green bar also decreases.

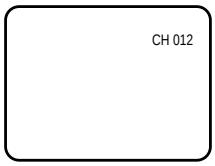


The sound level will be indicated on the TV screen by green bars and a number. As the sound level increases, so do the number of bars and the number on the screen. The same is true for decreasing the level.

3 Set the TV/CATV menu option to the appropriate position. When shipped from the factory, this menu option is in the CATV setting. See “TO MEMORIZE CHANNELS”.

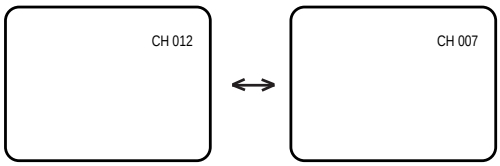
TV	-	VHF/UHF channels
CATV	-	CABLE TV channels

4 **CH (CHANNEL) + and – buttons**
Press and release the CH (CHANNEL) + or – button. The channel automatically stops at the next channel set into memory.

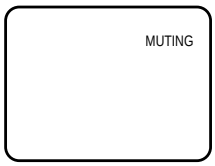


For proper operation, before selecting channels, they should be set into the TV’s memory.
See “TO MEMORIZE CHANNELS”.

RETURN button
Returns to the channel viewed just before the channel currently onscreen.



MUTING button
The MUTING button instantly turns the volume down completely when you press it.
Press MUTING button and the volume level will instantly go to zero. To restore the volume to its previous level, press MUTING button again.



10-key pad (0-9)
Press these buttons to select a channel. The channel number will appear on the upper right corner of the TV screen. If an invalid channel number is selected, the display will revert to the original channel.

TV Mode Direct Channel Selection
When the TV/CATV menu option is in the TV position, all channels can be instantly selected by using two buttons. (For example, to select channel 2, press “0”, then “2”. If you press only “2”, channel selection will be delayed for a few seconds). For channels 10 and above, press the 2 digits in order.

CATV Mode Direct Channel Selection
When the TV/CATV menu option is in the CATV position, channels can be selected as follows:

CH. 1-9	Press “0” twice, then 1-9 as needed. Example, to select channel 2, press “002”.
CH. 10-12	Press “0”, then remaining 2 digits. Example, to select channel 12, press “012”.
CH. 13-99	Press the 2 digits in order. Example, to select channel 36, press “36”.
CH. 100-125	Press the 3 digits in order. Example, to select channel 120, press “120”.

NOTE: If the station being viewed stops broadcasting, the TV will automatically shut off after 15 minutes.

INPUT button

Selects the signal input source for the television or Video1,2,3 or Component for video devices like VCR's, DVD players, or camcorders.

The input source changes as below.

STEREO AND SEPARATE AUDIO PROGRAM (SAP)

The TV is equipped with a feature known as Multi-channel TV Sound or MTS. MTS broadcasts greatly enhance TV viewing by bringing you programs with high fidelity stereo sound. MTS also provides an extra channel called the Separate Audio Program or SAP which broadcasters can use to transmit a second language for bilingual transmission or for other purposes.

LISTENING TO STEREO SOUND

When the TV is turned on or a channel selection is made, make certain the STEREO appears on the screen. This means that Stereo broadcasting is available. You can enjoy stereo sound from the left and right speakers.

- When Mono broadcasting is received, no indication is displayed.
- If the broadcast signal is not strong enough or clear stereo sound is not available, press the AUDIO SELECT button to change to mono sound. The noise should be eliminated. Press it again to return to the stereo sound.

LISTENING TO SAP (SEPARATE AUDIO PROGRAM)

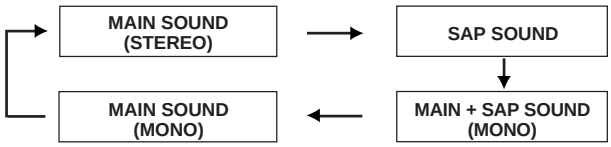
When the TV is turned on or a channel selection is made, make certain the SAP appears on the screen. This means that the “Separate Audio Program” broadcasting is available.

TO SELECT DESIRED SOUND

Press the AUDIO SELECT button to select the desired sound.

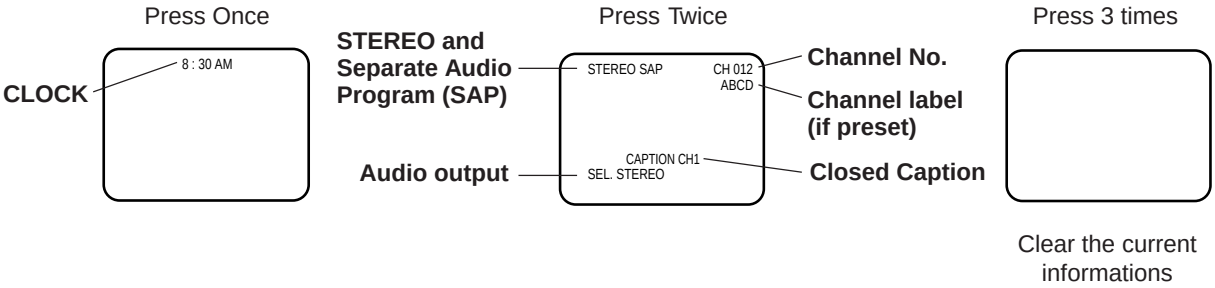
MONO+SAP BROADCASTING

STEREO+SAP BROADCASTING



DISPLAY button

Press the DISPLAY button to display the current informations on the screen.

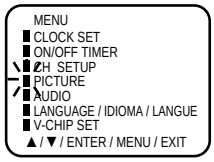


PICTURE ADJUSTMENTS

You can adjust the settings for color, sharpness, contrast, brightness, tint and component.

1 Press the MENU button.

2 Press the CH + (▲) or – (▼) button until the indicator next to "PICTURE" begins to flash, then press the ENTER button.



3 Press the CH + (▲) or – (▼) button repeatedly to select the item you want to adjust.

BRIGHTNESS ↔ CONTRAST ↔ COLOR

COMPONENT ↔ SHARPNESS ↔ TINT

4 Press the VOL + (►) or – (◄) button to adjust the setting.

	+	–
BRIGHTNESS	increase brightness	decrease brightness
CONTRAST	increase contrast	decrease contrast
COLOR	brilliant color	pale color
TINT	greenish color	reddish color
SHARPNESS	makes picture clearer	makes picture softer
COMPONENT	be best picture for DVD	indicate video device except DVD

TO RETURN TO INITIAL SETTING

Press the STANDARD button while the picture adjusting mode appears on the screen (except the adjusting component).

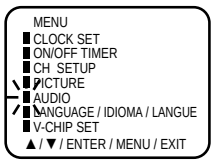
NOTE: The on-screen display will disappear 6 seconds after finishing an adjustment. The settings can only be adjusted when they are displayed on the TV screen.

SOUND ADJUSTMENTS

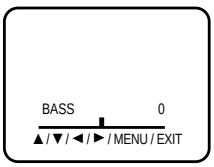
You can adjust the setting for bass, treble, balance, stable sound and hyper surround.

1 Press the MENU button.

2 Press the CH + (▲) or – (▼) button until the indicator next to "AUDIO" begins to flash, then press the ENTER button.



3 Press the CH + (▲) or – (▼) button repeatedly to select the item you want to adjust.



BASS ↔ TREBLE ↔ BALANCE

HYPER SURROUND ↔ STABLE SOUND

4 Press the VOL + (►) or – (◄) button to adjust the setting.

	+	–
BASS	makes the bass sound stronger	makes the bass sound weaker
TREBLE	makes the treble sound stronger	makes the treble sound weaker
BALANCE	makes the output level of right speaker stronger	makes the output level of left speaker stronger
STABLE SOUND	STABLE SOUND "ON"	STABLE SOUND "OFF"
HYPER SURROUND	HYPER SURROUND "ON"	HYPER SURROUND "OFF"

HYPER SURROUND FEATURE

The HYPER SURROUND feature expands the audio listening field wider and deeper to create exceptional sound quality from the TV's speakers. The feature uses stereo signals from a TV broadcast or video input.

TO RETURN TO INITIAL SETTING

Press the STANDARD button while the sound adjusting mode appears on the screen.

STABLE SOUND FEATURE

When the loud sound is made, the stable sound feature automatically lower the sound.

NOTE: The on-screen display will disappear 6 seconds after finishing an adjustment. The settings can only be adjusted when they are displayed on the TV screen.

CLOSED CAPTION

WHAT IS CLOSED CAPTIONING?

This television has the capability to decode and display Closed Captioned television programs. Closed Captioning will display text on the screen for hearing impaired viewers or it will translate and display text in another language.

TO VIEW CLOSED CAPTIONS

Press the C.C. button on the remote control to switch between normal TV and the two Closed Caption Modes (Captions and 1/2 of Full Screen Text).

Captions: This Closed Caption Mode will display text on the screen in English or another language. Generally, Closed Captions in English are transmitted on Captions Channel 1 and Closed Captions in other languages are transmitted on Captions Channel 2.
The Captions will appear in places on the screen where they will least interfere with the picture, usually on the bottom of the screen. News programs will usually show three-line Closed Captions which scroll onto the screen. Most other shows provide two or three lined Captions placed near the character who is speaking so the viewer can follow the dialogue. Words in italics or underlined describe titles, words in foreign languages or words requiring emphasis. Words that are sung usually appear enclosed by musical notes.

Text: The Text Closed Caption Mode will usually fill 1/2 of full screen with a programming schedule or other information. After selecting a Closed Caption Mode, it will stay in effect until it is changed, even if the channel is changed. If the Captions signal is lost due to a commercial or a break in the signal, the Captions will reappear when the signal is received again. If the channels are changed, the Captions will be delayed approximately 10 seconds.
For television programs broadcasting with Closed Captions, look in your TV guide for the Closed Captions symbol (CC).

- When activating the Closed Captioned Decoder, there will be a short delay before the Closed Captioned text appears on the screen.
- Closed Captioned text is only displayed in locations where it is available.
- If no caption signal is received, no captions will appear, but the television will remain in the Caption Mode.
- Misspellings or unusual characters may occasionally appear during Closed Captioning. This is normal with Closed Captioning, especially with live programs. This is because during live programs, captions are also entered live. These transmissions do not allow time for editing.
- When Captions are being displayed, on-screen displays, such as volume and MUTING may not be seen or may interfere with Closed Captions.
- Some cable systems and copy protection systems may interfere with the Closed Captioned signal.
- If using an indoor antenna or if TV reception is very poor, the Closed Caption Decoder may not appear or may appear with strange characters or misspelled words. In this case, adjust the antenna for better reception or use an outdoor antenna.

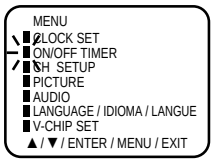
ON/OFF TIMER

ON TIMER SETTING

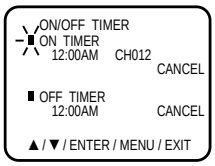
This feature allows you to have the TV automatically turn ON at predetermined time.
If you program the ON timer once the timer will turn ON the TV daily at the same time and to the same channel.
If the power has been turned on at programmed time, the channel is changed to a programmed one.

1 Press the MENU button.

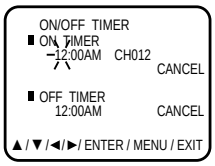
2 Press the CH + (▲) or CH – (▼) button until the indicator next to “ON/OFF TIMER” begins to flash, then press the ENTER button.



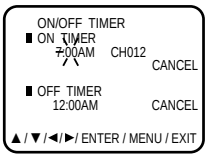
3 Press the CH + (▲) or CH – (▼) button until the indicator next to "ON TIMER" begins to flash, then press the ENTER button.



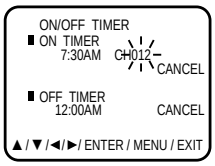
4 Press the CH + (▲) or CH – (▼) button to set the hour, then press the VOL + (▶) button.



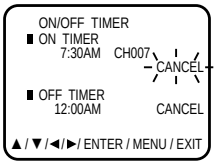
5 Press the CH + (▲) or CH – (▼) button to set the minute, then press the VOL + (▶) button.
- You can change in 10-minutes step by holding down the CH + (▲) or CH – (▼) button.



6 Press the CH+ (▲) or CH – (▼) button to set the channel, then press the VOL+ (▶) button.
- You can set the channel which is added in the “CH SET-UP” option.



7 Press the CH + (▲) or CH – (▼) button to select the “SET” mode.



8 Press the EXIT button.

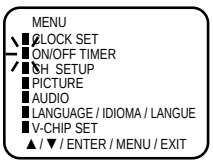
NOTES:
- You cannot set the ON/OFF TIMER when the clock is not set.
- This TV will automatically turn off approximately 1 hour later after the ON TIMER turns on the TV unless any buttons are pressed.
- To cancel the ON TIMER function:
  To cancel ON TIMER in step 7 above press the CH + (▲) or CH – (▼) button to select the “CANCEL” mode.

OFF TIMER SETTING

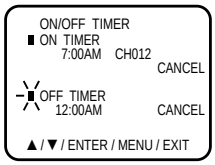
This feature allows you to have the TV turn “OFF” automatically at a predetermined time.
If you program the OFF TIMER once, The TV will be automatically turned off at the same time daily.

1 Press the MENU button.

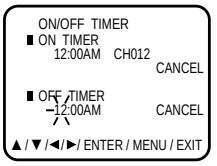
2 Press the CH + (▲) or CH – (▼) button until the indicator next to “ON/OFF TIMER” begins to flash, then press the ENTER button.



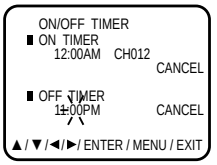
3 Press the CH + (▲) or CH – (▼) button until the indicator next to “OFF TIMER” begins to flash, then press the ENTER button.



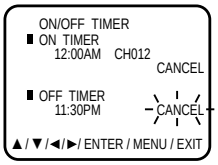
4 Press the CH + (▲) or CH – (▼) button to set the hour, then press the VOL + (▶) button.



5 Press the CH + (▲) or CH – (▼) button to set the minute then press the VOL + (▶) button.
- You can change in 10-minutes step by holding down the CH + (▲) or CH – (▼) button.



6 Press the CH + (▲) or CH – (▼) button to select the “SET” mode.

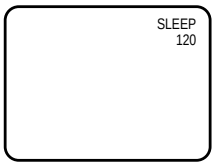


7 Press the EXIT button.

NOTES:
- If station being viewed stops broadcasting, the TV will automatically shut itself off after 15 minutes.
- To cancel the OFF TIMER function:
  To cancel OFF TIMER, in step 7 above press the CH + (▲) or CH – (▼) button to select the “CANCEL” mode.

SLEEP TIMER button

The Sleep Timer can turn the TV off for you after you fall asleep. Program it to work in intervals of 10 minutes, for a total time of up to 120 minutes.



- To change the sleep timer setting:
  Press the SLEEP TIMER button repeatedly until the display turns to desired time.
- To cancel the sleep time:
  Press the SLEEP TIMER button repeatedly until the display turns to 0.

VCR buttons

You can use this remote control to operate the basic functions of your VCR. These functions include: play, record, rewind, fast-forward, stop, pause, channel scan, TV /VCR, power on, and power off.

Move the selector switch to VCR to operate.

- The remote is preset with the code 000 to control JVC-brand VCR's. For any other manufacturer's brand VCR, please see the code chart and instructions on page 9.

DVD buttons

You can also use this remote control to operate the basic functions of your DVD player. These functions include play, rewind, fast-forward, stop, still/pause, previous/ next, tray open/close, power on, and power off.

Move the selector switch to DVD to operate.

- The remote is preset with the code 000 to control JVC-brand DVD players. For any other manufacturer's brand DVD player, please see the code chart and instructions on page 10.

TV/CATV switch

Use either the television's own tuner or a cable box to select channels. Set this switch to TV to operate the television's built-in tuner.

Move the switch to CATV to operate a cable box.

- See page 8 for information on programming your remote for cable box operation.

VCR/DVD switch

You can control a VCR or DVD player with the buttons on the lower part of the remote control.

Use the VCR/DVD selector switch to choose either VCR or DVD operation.

- See pages 9 and 10 for information on programming your remote with VCR and DVD operating codes.

TROUBLESHOOTING GUIDE

Before requesting service, please refer to the following chart for the symptom and possible solution.

SYMPTOMS	POSSIBLE SOLUTIONS
TV does not operate	• Make sure the power cord is plugged in. • Try another AC outlet. • Power is off, check fuse or circuit breaker. • Unplug unit for an hour, then plug it back in. • Set the 2 way selector switch on the remote control correctly (See page 6).
Poor sound or No sound	• Station or CATV experiencing problems, tune to another station. • Check sound adjustments (Volume and Muting). • Check for sources of possible interference.
Poor picture or No picture	• Station or CATV experiencing problems, tune to another station. • Make sure channels are set into memory. • Check antenna or CATV connections, reorient antenna. • Check for sources of possible interference. • Check picture control adjustments.
Poor reception on some channels	• Station or CATV experiencing problems, tune to another station. • Make sure channels are set into memory. • Station signal is weak, reorient antenna to receive desired station. • Check for sources of possible interference.
Poor color or no color	• Station or CATV experiencing problems, tune to another station. • Make sure channels are set into memory. • Check picture control adjustments. • Check antenna or CATV connections, reorient antenna. • Check for sources of possible interference.
Picture wobbles or drifts	• Station or CATV experiencing problems, tune to another station. • Make sure channels are set into memory. • CATV company is scrambling signal. • Check antenna orientation.
No CATV reception	• Check all CATV connections. • Set TV/CATV menu option to the CATV mode. • Station or CATV system problems, try another station.
Horizontal or diagonal bars on screen	• Check antenna connections, reorient antenna. • Check for sources of possible interference.
No reception above channel 13	• Make sure TV/CATV menu option is in the appropriate mode. • If using antenna, check UHF antenna connections.
No Remote operation	• Batteries are weak, dead or inserted incorrectly. • Remote is out of range, move closer to TV within (15 feet). • Make sure Remote is aimed at sensor. • Confirm there are no obstructions between the Remote and the TV. • Make sure the power cord is plugged in. • Set the 2 way selector switch on the remote control correctly (See page 6).
TV shuts off	• No broadcast on station tuned. • Sleep Timer is set. • ON/OFF TIMER is set. • Power interrupted. • Approximately 1 hour has passed after the ON TIMER turns on and no button was pressed (See page 21).
Closed - Caption is not activated.	• TV station experiencing problems or program tuned is not closed captioned. Try another channel. • Check CATV connection or VHF/UHF antenna, reposition or rotate antenna. • Press C.C. button to turn on the closed caption decoder.
Display is not shown in your language.	• Select proper language in the menu options.
The remote control does not operate other product.	• Set the 2 way selector switch on the remote control correctly (See page 6). • Program remote with a different code. • The remote control may not be compatible with your product. • Install new batteries.
The remote control does not operate some features of other product.	• Program remote with a different code. • The remote control may not be able to operate all features of your product.

SPECIFICATIONS

	AV-24F704	AV-20F704	AV-14F704
AC Power Input:	120 V, 60 Hz		
AC Power Consumption:	125W	105W	80W
Picture Tube:	24" (measured diagonally)	20" (measured diagonally)	14" (measured diagonally)
Audio Power Output Rating:	5 W + 5 W	2.5 W + 2.5 W	2.5 W + 2.5 W
Speaker:	2" x 4-3/4", 8 ohm x 2		1-5/8" x 2-13/16", 8 ohm x 2
Audio/Video Input:	COMPONENT Input: Y-Input: 1.0Vp-p, 75 ohm PB, PR-input: 0.7Vp-p, 75 ohm S-Video Input Y-Input: 1.0Vp-p, 75 ohm C-Input: 0.3Vp-p, 75 ohm Video Input: 1.0Vp-p, 75 ohm Audio Input: –8dB, 47k ohm		
Tuner Type:	181 Channel, Quartz PLL Frequency Synthesized		
Receiving Channels:			
VHF	2-13		
UHF	14-69		
CATV	01-97 (5A)-(A-3) 98-99 (A-2)-(A-1) 14-22 (A)-(I) 23-36 (J)-(W) 37-65 (AA)-(FFF) 66-125 (GGG)-(125)		
Antenna Input Impedance:	75 ohm (VHF/UHF/CATV) Coaxial Input		
Dimensions:	26-1/2" (W) x 19-1/8" (D) x 20-1/8" (H)	23-1/4" (W) x 19-3/4" (D) x 17-1/2" (H)	17-1/8" (W) x 15-1/2" (D) x 13-5/8" (H)
Weight:	72.6 lbs	55.2 lbs	26.4 lbs

ACCESSORIES:

Remote Control

Batteries (2 x AA)

Specifications are subject to change without notice.

JVC®

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J3M80301A K
03/04

PRINTED IN THAILAND

PARTS LIST

CAUTION

- The parts identified by the ⚠ symbol are important for the safety. Whenever replacing these parts, be sure to use specified ones to secure the safety.
- The parts not indicated in this Parts List and those which are filled with lines --- in the Parts No. columns will not be supplied.
- P. W. Board Ass'y will not be supplied, but those which are filled with the Parts No. in the Parts No. columns will be supplied.

ABBREVIATIONS OF RESISTORS, CAPACITORS

RESISTOR

RC ..... CARBON RESISTOR
MG R ..... METAL GLAZED RESISTOR

CAPACITORS

CC ..... CERAMIC CAPACITOR
CE ..... ALUMI ELECTROLYTIC CAPACITOR
CP ..... POLYESTER CAPACITOR
CPP ..... POLYPROPYLENE CAPACITOR
CPL ..... PLASTIC CAPACITOR
CMP ..... METAL POLYESTER CAPACITOR
CMPL ..... METAL PLASTIC CAPACITOR
CMPP ..... METAL POLYPROPYLENE CAPACITOR

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- MECHANICAL EXPLODED VIEW 21
- ELECTRICAL REPLACEMENT PARTS LIST 22
- PACKING & ACCESSORY REPLACEMENT PARTS LIST 28

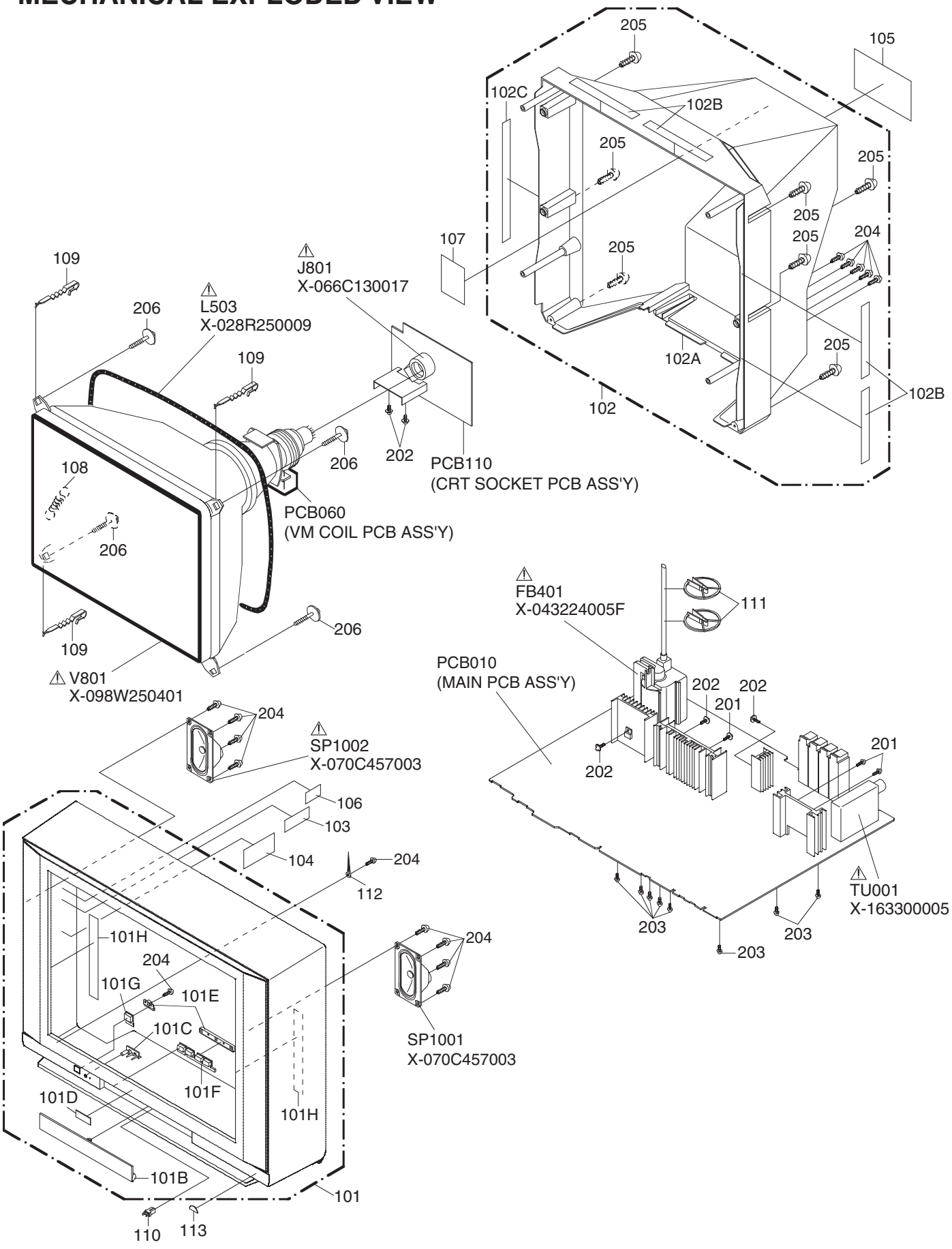
USING P.W. BOARD

P.W.B ASS'Y \ Model	AV-24F704
MAIN PCB ASS'Y	X-A3M6030010
VM COIL PCB ASS'Y	X-A3M6030060
CRT PCB ASS'Y	X-A3M6030110

MECHANICAL REPLACEMENT PARTS LIST

⚠ REF. NO.	PART NO.	PART NAME	DESCRIPTION
101	X-A3M6030720	CABINET,FRONT ASSY	
101B	X-712WPBA044	DOOR	
101C	X-713WPA0140	GLASS,LED	
101D	X-7235380003	BRAND,BADGE	
101E	X-735WPA0538	BUTTON,HOLDER	
101F	X-735WPA0539	BUTTON,CHANNEL/VOLUME	
101G	X-735WPBA624	BUTTON,POWER	
101H	X-800WQ0A008	FELT SHEET	
102	X-A3M6030740	CABINET,BACK ASSY	
102A	X-702WPAA210	CABINET,BACK	
102B	X-800WQ00039	FELT SHEET	
102C	X-800WQ00068	FELT SHEET	
103	X-7220001107	SHEET,HWC	
104	X-7220001119	SHEET,CSA WARNING	
105	X-722538A047	SHEET,RATING	
106	X-7230006818	SHEET,CAUTION	
107	X-726000A030	SHEET,CRT NO.	
108	X-741WUA0001	SPRING,EARTH	
109	X-762WPA0011	HOLDER,CRT WIRE	
110	X-890LA20000	NC LATCH(LA-2)	
111	X-899HV3T000	HOLDER,ANODE WIRE	
112	X-8995034000	CORD CLIP UL CO.	
113	X-7230007053	LABEL,ENEGY STAR	
201	X-8107630804	SCREW,TAP TITE(S) BRAZIER	3x8
202	X-8109I30A04	SCREW,TAP TITE(B) WH7	3x10
203	X-8109630802	SCREW,TAP TITE(B) BRAZIER	3x8
204	X-8110630A04	SCREW,TAP TITE(P) BRAZIER	3x10
205	X-8117540A64	SCREW,TAPPING(B0) TRUSS	4x16
206	X-8141J50D04	SCREW,TAP TITE(P) GW22	5x40

MECHANICAL EXPLODED VIEW



ELECTRICAL REPLACEMENT PARTS LIST

MAIN PCB ASS'Y

⚠	Symbol No.	Part No.	Part Name	Description	Local
	PCB010	X-A3M6030010	MAIN PCB ASS'Y	TMC559B	

RESISTORS

	R001	QRE121J-683Y	RC	68kΩ	1/2W
	R002	QRE121J-683Y	RC	68kΩ	1/2W
	R006	NRSA02J-101X	MG R	100Ω	1/10W
	R101	NRSA02J-561X	MG R	560Ω	1/10W
	R102	QRE141J-271Y	RC	270Ω	1/4W
	R103	NRSA02J-272X	MG R	2.7kΩ	1/10W
	R106	NRSA02J-561X	MG R	560Ω	1/10W
	R109	NRSA02J-102X	MG R	1kΩ	1/10W
	R110	NRSA02J-103X	MG R	10kΩ	1/10W
	R112	NRSA02J-222X	MG R	2.2kΩ	1/10W
	R113	NRSA02J-222X	MG R	2.2kΩ	1/10W
	R114	NRSA02J-473X	MG R	47kΩ	1/10W
	R118	QRE141J-222Y	RC	2.2kΩ	1/4W
	R119	QRE141J-223Y	RC	22kΩ	1/4W
	R120	QRE141J-470Y	RC	47Ω	1/4W
	R122	NRSA02J-102X	MG R	1kΩ	1/10W
	R124	QRE141J-102Y	RC	1kΩ	1/4W
	R125	NRSA02J-100X	MG R	10Ω	1/10W
	R126	NRSA02J-101X	MG R	100Ω	1/10W
	R127	NRSA02J-332X	MG R	3.3kΩ	1/10W
	R128	NRSA02J-332X	MG R	3.3kΩ	1/10W
	R129	NRSA02J-332X	MG R	3.3kΩ	1/10W
	R130	QRE141J-473Y	RC	47kΩ	1/4W
	R131	NRSA02J-102X	MG R	1kΩ	1/10W
	R132	QRE141J-101Y	RC	100Ω	1/4W
	R133	QRE141J-102Y	RC	1kΩ	1/4W
	R134	NRSA02J-103X	MG R	10kΩ	1/10W
	R135	NRSA02J-472X	MG R	4.7kΩ	1/10W
	R136	NRSA02J-472X	MG R	4.7kΩ	1/10W
	R137	NRSA02J-103X	MG R	10kΩ	1/10W
	R138	NRSA02J-105X	MG R	1MΩ	1/10W
	R139	QRE141J-101Y	RC	100Ω	1/4W
	R140	QRE141J-101Y	RC	100Ω	1/4W
	R141	NRSA02J-821X	MG R	820Ω	1/10W
	R142	NRSA02J-821X	MG R	820Ω	1/10W
	R143	NRSA02J-821X	MG R	820Ω	1/10W
	R145	NRSA02J-222X	MG R	2.2kΩ	1/10W
	R146	QRE141J-101Y	RC	100Ω	1/4W
	R150	NRSA02J-102X	MG R	1kΩ	1/10W
	R301	QRE141J-272Y	RC	2.7kΩ	1/4W
	R302	QRE141J-272Y	RC	2.7kΩ	1/4W
	R303	QRE141J-101Y	RC	100Ω	1/4W
	R304	QRE141J-101Y	RC	100Ω	1/4W
	R314	NRSA02J-224X	MG R	220kΩ	1/10W
	R401	NRSA02J-472X	MG R	4.7kΩ	1/10W
	R403	NRSA02J-102X	MG R	1kΩ	1/10W
	R404	NRSA02J-101X	MG R	100Ω	1/10W
	R406	QRE121J-471Y	RC	470Ω	1/2W
	R407	NRSA02J-122X	MG R	1.2kΩ	1/10W
	R409	NRSA02J-102X	MG R	1kΩ	1/10W
⚠	R410	X-R3X18A470J	R,METAL OXIDE	47Ω	2W
	R413	X-R4X5T6183F	R,METAL	18kΩ	1/6W
	R414	X-R4X5T6273F	R,METAL	27kΩ	1/6W
	R415	NRSA02J-821X	MG R	820Ω	1/10W
	R416	QRE121J-5R6Y	RC	5.6Ω	1/2W
	R417	NRSA02J-333X	MG R	33kΩ	1/10W
	R418	QRE121J-821Y	RC	820Ω	1/2W
	R420	QRE121J-2R2Y	RC	2.2Ω	1/2W
	R421	QRE121J-561Y	RC	560Ω	1/2W
	R422	QRE121J-681Y	RC	680Ω	1/2W
	R426	X-R4X5T4472F	R,METAL	4.7kΩ	1/4W
	R427	QRE121J-821Y	RC	820Ω	1/2W
	R428	QRE141J-101Y	RC	100Ω	1/4W
	R429	QRE121J-561Y	RC	560Ω	1/2W
	R430	QRE121J-823Y	RC	82kΩ	1/2W
	R432	QRE121J-822Y	RC	8.2kΩ	1/2W
	R433	QRE121J-561Y	RC	560Ω	1/2W
⚠	R434	X-R5Y2CF1R8J	R,CEMENT	1.8Ω	10W
	R436	X-R4X5T4183F	R,METAL	18kΩ	1/4W
	R437	QRE121J-1R0Y	RC	1Ω	1/2W
⚠	R438	X-R6358A3R3J	R,FUSE	3.3Ω	2W
⚠	R439	X-R3K181102J	R,METAL	1kΩ	1W
	R441	X-R4X5T6153F	R,METAL	15kΩ	1/6W
	R443	QRE121J-154Y	RC	150kΩ	1/2W
	R448	NRSA02J-683X	MG R	68kΩ	1/10W
	R449	NRSA02J-273X	MG R	27kΩ	1/10W
⚠	R452	X-R3X18A391J	R,METAL OXIDE	390Ω	2W
	R453	NRSA02J-103X	MG R	10kΩ	1/10W

⚠	Symbol No.	Part No.	Part Name	Description	Local

RESISTORS

	R455	QRE121J-221Y	RC	220Ω	1/2W
	R456	QRE121J-562Y	RC	5.6kΩ	1/2W
	R457	QRE141J-472Y	RC	4.7kΩ	1/4W
	R458	NRSA02J-102X	MG R	1kΩ	1/10W
	R459	X-R65582010J	R,FUSE	1Ω	1/2W
	R461	NRSA02J-102X	MG R	1kΩ	1/10W
	R462	NRSA02J-103X	MG R	10kΩ	1/10W
⚠	R500	X-R0G3K2275K	RC	2.7MΩ	1/2W
⚠	R501	X-R5X2AE010J	R,CEMENT	1Ω	7W
⚠	R502	X-R3X28A331J	R,METAL OXIDE	330Ω	2W
	R503	QRE141J-103Y	RC	10kΩ	1/4W
	R505	QRE141J-103Y	RC	10kΩ	1/4W
	R506	QRE141J-682Y	RC	6.8kΩ	1/4W
	R507	QRE141J-823Y	RC	82kΩ	1/4W
	R510	QRE141J-101Y	RC	100Ω	1/4W
	R511	NRSA02J-223X	MG R	22kΩ	1/10W
	R512	QRE121J-222Y	RC	2.2kΩ	1/2W
	R513	NRSA02J-103X	MG R	10kΩ	1/10W
	R515	QRE141J-103Y	RC	10kΩ	1/4W
	R516	NRSA02J-103X	MG R	10kΩ	1/10W
⚠	R517	X-R3X28B010J	R,METAL	1Ω	3W
	R519	NRSA02J-103X	MG R	10kΩ	1/10W
	R520	QRE121J-155Y	RC	1.5MΩ	1/2W
	R524	QRE141J-332Y	RC	3.3kΩ	1/4W
	R525	NRSA02J-153X	MG R	15kΩ	1/10W
⚠	R527	X-R3X18AR68J	R,METAL OXIDE	0.68Ω	2W
	R532	NRSA02J-152X	MG R	1.5kΩ	1/10W
	R533	NRSA02J-271X	MG R	270Ω	1/10W
	R535	QRE141J-392Y	RC	3.9kΩ	1/4W
	R536	QRE141J-472Y	RC	4.7kΩ	1/4W
	R537	QRE141J-104Y	RC	100kΩ	1/4W
	R539	QRE141J-125Y	RC	1.2MΩ	1/4W
	R540	QRE141J-125Y	RC	1.2MΩ	1/4W
⚠	R541	X-R63581R22J	R,FUSE	0.22Ω	1W
⚠	R542	X-R3X181R15J	R,METAL OXIDE	0.15Ω	1W
	R543	QRE121J-102Y	RC	1kΩ	1/2W
	R544	QRE141J-271Y	RC	270Ω	1/4W
	R545	QRE141J-151Y	RC	150Ω	1/4W
	R546	QRE141J-101Y	RC	100Ω	1/4W
	R547	QRE141J-101Y	RC	100Ω	1/4W
	R553	QRE121J-682Y	RC	6.8kΩ	1/2W
	R554	QRE121J-104Y	RC	100kΩ	1/2W
	R601	QRE121J-150Y	RC	15Ω	1/2W
⚠	R602	X-R3X28B120J	R,METAL OXIDE	12Ω	3W
	R603	QRE121J-331Y	RC	330Ω	1/2W
	R604	NRSA02J-102X	MG R	1kΩ	1/10W
	R605	NRSA02J-331X	MG R	330Ω	1/10W
	R606	NRSA02J-331X	MG R	330Ω	1/10W
	R607	NRSA02J-103X	MG R	10kΩ	1/10W
	R608	NRSA02J-392X	MG R	3.9kΩ	1/10W
	R609	NRSA02J-101X	MG R	100Ω	1/10W
	R610	NRSA02J-101X	MG R	100Ω	1/10W
	R611	NRSA02J-103X	MG R	10kΩ	1/10W
	R612	NRSA02J-103X	MG R	10kΩ	1/10W
	R613	NRSA02J-391X	MG R	390Ω	1/10W
	R616	QRE121J-121Y	RC	120Ω	1/2W
	R617	NRSA02J-101X	MG R	100Ω	1/10W
	R618	NRSA02J-822X	MG R	8.2kΩ	1/10W
	R619	NRSA02J-102X	MG R	1kΩ	1/10W
	R620	NRSA02J-101X	MG R	100Ω	1/10W
	R621	NRSA02J-102X	MG R	1kΩ	1/10W
	R622	NRSA02J-562X	MG R	5.6kΩ	1/10W
	R623	QRE141J-101Y	RC	100Ω	1/4W
	R624	NRSA02J-153X	MG R	15kΩ	1/10W
	R625	NRSA02J-682X	MG R	6.8kΩ	1/10W
	R626	QRE141J-101Y	RC	100Ω	1/4W
	R627	NRSA02J-101X	MG R	100Ω	1/10W
	R628	NRSA02J-101X	MG R	100Ω	1/10W
	R629	NRSA02J-682X	MG R	6.8kΩ	1/10W
	R632	NRSA02J-333X	MG R	33kΩ	1/10W
	R634	NRSA02J-102X	MG R	1kΩ	1/10W
	R635	NRSA02J-563X	MG R	56kΩ	1/10W
	R636	NRSA02J-152X	MG R	1.5kΩ	1/10W
	R637	NRSA02J-822X	MG R	8.2kΩ	1/10W
	R641	NRSA02J-103X	MG R	10kΩ	1/10W
	R642	NRSA02J-332X	MG R	3.3kΩ	1/10W
	R643	NRSA02J-102X	MG R	1kΩ	1/10W
	R644	NRSA02J-561X	MG R	560Ω	1/10W
	R645	NRSA02J-271X	MG R	270Ω	1/10W
	R646	NRSA02J-472X	MG R	4.7kΩ	1/10W
	R647	NRSA02J-472X	MG R	4.7kΩ	1/10W

⚠	Symbol No.	Part No.	Part Name	Description	Local
	RESISTORS				
	R648	QRE121J-100Y	RC	10Ω 1/2W	
⚠	R649	X-R3X28B120J	R,METAL OXIDE	12Ω 3W	
	R654	NRSA02J-563X	MG R	56kΩ 1/10W	
	R701	QRE141J-561Y	RC	560Ω 1/4W	
	R702	QRE141J-221Y	RC	220Ω 1/4W	
	R703	NRSA02J-222X	MG R	2.2kΩ 1/10W	
	R704	NRSA02J-102X	MG R	1kΩ 1/10W	
	R705	NRSA02J-332X	MG R	3.3kΩ 1/10W	
	R706	NRSA02J-332X	MG R	3.3kΩ 1/10W	
	R708	NRSA02J-102X	MG R	1kΩ 1/10W	
	R709	NRSA02J-271X	MG R	270Ω 1/10W	
	R710	QRE141J-102Y	RC	1kΩ 1/4W	
	R711	NRSA02J-102X	MG R	1kΩ 1/10W	
	R721	NRSA02J-680X	MG R	68Ω 1/10W	
	R724	NRSA02J-750X	MG R	75Ω 1/10W	
	R725	NRSA02J-750X	MG R	75Ω 1/10W	
	R726	NRSA02J-102X	MG R	1kΩ 1/10W	
	R727	NRSA02J-750X	MG R	75Ω 1/10W	
	R728	NRSA02J-102X	MG R	1kΩ 1/10W	
	R729	NRSA02J-750X	MG R	75Ω 1/10W	
	R730	NRSA02J-750X	MG R	75Ω 1/10W	
	R733	NRSA02J-102X	MG R	1kΩ 1/10W	
	R734	NRSA02J-102X	MG R	1kΩ 1/10W	
	R735	NRSA02J-750X	MG R	75Ω 1/10W	
	R736	NRSA02J-750X	MG R	75Ω 1/10W	
	R739	NRSA02J-750X	MG R	75Ω 1/10W	
	R745	NRSA02J-102X	MG R	1kΩ 1/10W	
	R746	NRSA02J-102X	MG R	1kΩ 1/10W	
	R901	QRE141J-221Y	RC	220Ω 1/4W	
	R902	QRE141J-563Y	RC	56kΩ 1/4W	
	R903	NRSA02J-393X	MG R	39kΩ 1/10W	
	R904	QRE141J-221Y	RC	220Ω 1/4W	
	R905	QRE141J-563Y	RC	56kΩ 1/4W	
	R906	NRSA02J-393X	MG R	39kΩ 1/10W	
	R907	NRSA02J-224X	MG R	220kΩ 1/10W	
	R912	NRSA02J-331X	MG R	330Ω 1/10W	
	R913	QRE141J-106Y	RC	10MΩ 1/4W	
	R1001	QRE121J-391Y	RC	390Ω 1/2W	
	R1002	QRE121J-391Y	RC	390Ω 1/2W	
	R1003	NRSA02J-822X	MG R	8.2kΩ 1/10W	
	R1004	NRSA02J-822X	MG R	8.2kΩ 1/10W	
	R1009	QRE141J-103Y	RC	10kΩ 1/4W	
	R1010	NRSA02J-103X	MG R	10kΩ 1/10W	
	R1011	NRSA02J-103X	MG R	10kΩ 1/10W	
	R1013	NRSA02J-103X	MG R	10kΩ 1/10W	
	R1502	NRSA02J-101X	MG R	100Ω 1/10W	
	R1503	NRSA02J-271X	MG R	270Ω 1/10W	
	R1504	NRSA02J-822X	MG R	8.2kΩ 1/10W	
	R1505	NRSA02J-682X	MG R	6.8kΩ 1/10W	
	R1506	NRSA02J-332X	MG R	3.3kΩ 1/10W	
	R1507	NRSA02J-102X	MG R	1kΩ 1/10W	
	R1508	NRSA02J-392X	MG R	3.9kΩ 1/10W	
	R1509	NRSA02J-473X	MG R	47kΩ 1/10W	
	R1510	NRSA02J-473X	MG R	47kΩ 1/10W	
	R1512	NRSA02J-471X	MG R	470Ω 1/10W	
	R1516	NRSA02J-102X	MG R	1kΩ 1/10W	
	R1518	NRSA02J-273X	MG R	27kΩ 1/10W	
	R1519	NRSA02J-243X	MG R	24kΩ 1/10W	
	R1520	NRSA02J-122X	MG R	1.2kΩ 1/10W	
	R1522	NRSA02J-102X	MG R	1kΩ 1/10W	
	R1523	NRSA02J-101X	MG R	100Ω 1/10W	
	R1528	NRSA02J-823X	MG R	82kΩ 1/10W	
	R1529	NRSA02J-103X	MG R	10kΩ 1/10W	
	R1530	NRSA02J-471X	MG R	470Ω 1/10W	
	CAPACITORS				
	C001	QETN0JM-107Z	CE	100µF 6.3V	
	C002	NCB21EK-104X	CC	0.1µF 25V	B
	C005	NCF21HZ-104X	CC	0.1µF 50V	F
	C102	NDC21HJ-270X	CC	27pF 50V	CH
	C104	NDC21HJ-270X	CC	27pF 50V	CH
	C106	NCB21EK-104X	CC	0.1µF 25V	B
	C108	QEKJ1CM-106Z	CE	10µF 16V	
	C109	QCBB1HK-104Y	CC	0.1µF 50V	B
	C110	X-E02LT0222M	CE	2200µF 6.3V	
	C111	NCB21HK-102X	CC	1000pF 50V	B
	C113	QCBB1HK-104Y	CC	0.1µF 50V	B
	C114	QEKJ1HM-474Z	CE	0.47µF 50V	
	C115	NCB21HK-821X	CC	820pF 50V	B
	C117	NDC21HJ-470X	CC	47pF 50V	CH

⚠	Symbol No.	Part No.	Part Name	Description	Local
	CAPACITORS				
	C119	NDC21HJ-221X	CC	220pF 50V	CH
	C120	NCB21HK-102X	CC	1000pF 50V	B
	C121	NCB21HK-103X	CC	0.01µF 50V	B
	C122	QEKJ1HM-105Z	CE	1µF 50V	
	C128	NCF21HZ-104X	CC	0.1µF 50V	F
	C135	X-CS0RCH411D	CC	10pF 50V	CH
	C136	NCB21EK-104X	CC	0.1µF 25V	B
	C137	NCB21EK-104X	CC	0.1µF 25V	B
	C138	NCB21EK-104X	CC	0.1µF 25V	B
	C139	QEKJ1CM-106Z	CE	10µF 16V	
	C140	NDC21HJ-221X	CC	220pF 50V	CH
	C141	NDC21HJ-221X	CC	220pF 50V	CH
	C142	NDC21HJ-221X	CC	220pF 50V	CH
	C143	NDC21HJ-221X	CC	220pF 50V	CH
	C144	NDC21HJ-101X	CC	100pF 50V	CH
	C146	NDC21HJ-330X	CC	33pF 50V	CH
	C301	NCB21HK-333X	CC	0.033µF 50V	B
	C302	QETN1HM-106Z	CE	10µF 50V	
	C303	NCB21HK-103X	CC	0.01µF 50V	B
	C304	QETN1HM-106Z	CE	10µF 50V	
	C305	QETN1HM-106Z	CE	10µF 50V	
	C306	QETN1CM-107Z	CE	100µF 16V	
	C307	NCB21HK-153X	CC	0.015µF 50V	B
	C308	QETN1HM-106Z	CE	10µF 50V	
	C309	NCB21HK-393X	CC	0.039µF 50V	B
	C310	NCB21HK-333X	CC	0.033µF 50V	B
	C311	NCB21EK-104X	CC	0.1µF 25V	B
	C312	NCB21HK-103X	CC	0.01µF 50V	B
	C313	NCB21HK-103X	CC	0.01µF 50V	B
	C314	QETN1HM-106Z	CE	10µF 50V	
	C315	NCB21EK-104X	CC	0.1µF 25V	B
	C316	QETN1HM-106Z	CE	10µF 50V	
	C317	QETN1HM-106Z	CE	10µF 50V	
	C318	QETN1HM-106Z	CE	10µF 50V	
	C319	QETN1HM-106Z	CE	10µF 50V	
	C320	NDC21HJ-560X	CC	56pF 50V	CH
	C321	QETN1HM-106Z	CE	10µF 50V	
	C322	NDC21HJ-560X	CC	56pF 50V	CH
	C333	QETN1HM-106Z	CE	10µF 50V	
	C334	NCB21CK-105X	CC	1µF 16V	B
	C401	X-C0JTSL5K1J	CC	27pF 500V	SL
	C402	X-P232W1103J	CMP	0.01µF 100V	MMTS
	C403	QETN1HM-226Z	CE	22µF 50V	
	C405	NDC21HJ-561X	CC	560pF 50V	CH
	C406	QETN1HM-105Z	CE	1µF 50V	
	C407	QETN1VM-107Z	CE	100µF 35V	
	C408	X-E5EZF3102M	CE	1000µF 25V	
	C409	QETN1HM-106Z	CE	10µF 50V	
	C411	NDC21HJ-102X	CC	1000pF 50V	CH
	C412	X-P4N8FJ332H	CMPP	3300pF 1.25kV	
	C413	X-E0ELF4102M	CE	1000µF 35V	
	C415	QCB32HK-221Z	CC	220pF 500V	B
	C416	NDC21HJ-101X	CC	100pF 50V	CH
	C417	X-P232W1224J	CMP	0.22µF 100V	MMTS
	C418	X-P4J7F3474J	CMPP	0.47µF 250V	PMS
⚠	C420	X-P4N8FJ153H	CMPP	0.015µF 1.25kV	
	C421	X-P3N1F5223J	CPP	0.022µF 630V	
	C422	X-P611T1104J	CMPL	0.1µF 100V	TF
	C425	X-C03L0R713K	CC	1000pF 2kV	R
	C426	X-E5EZFD220M	CE	22µF 250V	
	C427	X-P232W1104J	CMP	0.1µF 100V	MMTS
	C429	NDC21HJ-270X	CC	27pF 50V	CH
	C430	X-E02LU8220M	CE	22µF 100V	
	C439	NCB21HK-102X	CC	1000pF 50V	B
	C442	X-E53FF56R8M	CE	6.8µF 50V	NP
	C501	X-E02LF3222M	CE	2200µF 25V	
	C502	X-C03L0R713K	CC	1000pF 2kV	R
	C503	X-C03L0R713K	CC	1000pF 2kV	R
	C504	QETN1HM-225Z	CE	2.2µF 50V	
⚠	C505	X-P2122B224M	CMP	0.22µF 275V	ECQUL
⚠	C506	X-P2122B104M	CMP	0.1µF 275V	ECQUL
	C507	X-E51DFC821M	CE	820µF 200V	
⚠	C508	X-CD39E0MH3M	CC	2200pF 250V	
	C509	QETN1EM-476Z	CE	47µF 25V	
	C511	NDC21HJ-221X	CC	220pF 50V	CH
	C512	X-P232W1473J	CMP	0.047µF 100V	MMTS
⚠	C513	X-CD39E0M13M	CC	1000pF 250V	
	C516	QCB32HK-102Z	CC	1000pF 500V	B
	C517	X-C03L0R7E3K	CC	1500pF 2kV	R
⚠	C519	X-CD39E0M13M	CC	1000pF 250V	
	C520	QCB32HK-102Z	CC	1000pF 500V	B

⚠	Symbol No.	Part No.	Part Name	Description		Local
	CAPACITORS					
	C521	X-E62NFB221M	CE	220µF	160V	
	C523	X-CQGTCH413J	CC	1000pF	50V	CH
	C524	QCB32HK-102Z	CC	1000pF	500V	B
	C527	X-E02LF2222M	CE	2200µF	16V	
	C535	X-C03L0R713K	CC	1000pF	2kV	R
	C539	QETN1HM-106Z	CE	10µF	50V	
	C541	NCB21HK-103X	CC	0.01µF	50V	B
	C550	X-E02LT2102M	CE	1000µF	16V	
	C554	NCB21HK-223X	CC	0.022µF	50V	B
	C601	X-E00NU2470M	CE	47µF	16V	
	C602	QETN1HM-105Z	CE	1µF	50V	
	C603	QETN1CM-476Z	CE	47µF	16V	
	C604	NDC21HJ-101X	CC	100pF	50V	CH
	C605	QETN1CM-476Z	CE	47µF	16V	
	C606	X-P6M9T0334J	CMPL	0.33µF	50V	TF
	C607	NCB21HK-103X	CC	0.01µF	50V	B
	C608	QETN1CM-476Z	CE	47µF	16V	
	C609	X-P6M9T0104J	CMPL	0.1µF	50V	TF
	C610	QETN1CM-476Z	CE	47µF	16V	
	C611	QEKJ1HM-105Z	CE	1µF	50V	
	C612	NCB21HK-103X	CC	0.01µF	50V	B
	C614	NCB21EK-104X	CC	0.1µF	25V	B
	C615	QEKJ1HM-105Z	CE	1µF	50V	
	C616	NCB21HK-123X	CC	0.012µF	50V	B
	C618	QEKJ1HM-105Z	CE	1µF	50V	
	C619	NCF21HZ-104X	CC	0.1µF	50V	F
	C621	QEKJ1HM-105Z	CE	1µF	50V	
	C622	QETN1CM-476Z	CE	47µF	16V	
	C623	QETN1CM-107Z	CE	100µF	16V	
	C624	NCB21EK-104X	CC	0.1µF	25V	B
	C625	NDC21HJ-470X	CC	47pF	50V	CH
	C627	QEKJ1HM-105Z	CE	1µF	50V	
	C628	NCB21HK-103X	CC	0.01µF	50V	B
	C629	X-E02LT2102M	CE	1000µF	16V	
	C630	QEKJ1HM-474Z	CE	0.47µF	50V	
	C631	NCB21HK-153X	CC	0.015µF	50V	B
	C632	NDC21HJ-180X	CC	18pF	50V	CH
	C633	NDC21HJ-820X	CC	82pF	50V	CH
	C634	NCB21CK-104X	CC	0.1µF	16V	B
	C635	NDC21HJ-220X	CC	22pF	50V	CH
	C636	NCB21HK-822X	CC	8200pF	50V	B
	C637	NDC21HJ-330X	CC	33pF	50V	CH
	C638	X-E00NU2100M	CE	10µF	16V	
	C640	NCF21HZ-103X	CC	0.01µF	50V	F
	C641	NCB21EK-104X	CC	0.1µF	25V	B
	C642	QEKJ1HM-105Z	CE	1µF	50V	
	C643	NDC21HJ-330X	CC	33pF	50V	CH
	C644	NDC21HJ-330X	CC	33pF	50V	CH
	C701	QEKJ1CM-106Z	CE	10µF	16V	
	C702	QEKJ1CM-106Z	CE	10µF	16V	
	C705	QETN1CM-107Z	CE	100µF	16V	
	C706	NCF21HZ-104X	CC	0.1µF	50V	F
	C707	QEKJ1CM-106Z	CE	10µF	16V	
	C708	QETN1CM-107Z	CE	100µF	16V	
	C710	X-E00NU2470M	CE	47µF	16V	
	C711	QEKJ1CM-106Z	CE	10µF	16V	
	C719	NCB21CK-105X	CC	1µF	16V	B
	C720	NCB21CK-105X	CC	1µF	16V	B
	C722	NCB21CK-105X	CC	1µF	16V	B
	C724	NCB21CK-105X	CC	1µF	16V	B
	C725	NCB21CK-105X	CC	1µF	16V	B
	C727	NCB21CK-105X	CC	1µF	16V	B
	C728	X-E02LT2471M	CE	470µF	16V	
	C733	QEKJ1CM-226Z	CE	22µF	16V	
	C734	NCB21EK-104X	CC	0.1µF	25V	B
	C735	NCB21HK-562X	CC	5600pF	50V	B
	C736	NCB21HK-562X	CC	5600pF	50V	B
	C737	NCB21HK-562X	CC	5600pF	50V	B
	C738	NCB21HK-562X	CC	5600pF	50V	B
	C741	NCB21HK-562X	CC	5600pF	50V	B
	C742	NCB21HK-562X	CC	5600pF	50V	B
	C901	QEKJ1HM-105Z	CE	1µF	50V	
	C902	QEKJ1HM-105Z	CE	1µF	50V	
	C903	QEKJ1HM-475Z	CE	4.7µF	50V	
	C904	QEKJ1HM-475Z	CE	4.7µF	50V	
	C905	QEKJ1HM-475Z	CE	4.7µF	50V	
	C907	QETN1HM-106Z	CE	10µF	50V	
	C908	NCB21HK-223X	CC	0.022µF	50V	B
	C910	QEKJ1HM-334Z	CE	0.33µF	50V	
	C911	NCB21HK-473X	CC	0.047µF	50V	B
	C912	NCB21HK-223X	CC	0.022µF	50V	B

⚠	Symbol No.	Part No.	Part Name	Description		Local
	CAPACITORS					
	C913	NCB21EK-104X	CC	0.1µF	25V	B
	C914	QEKJ1HM-335Z	CE	3.3µF	50V	
	C915	NCB21EK-104X	CC	0.1µF	25V	B
	C916	QETN1AM-107Z	CE	100µF	10V	
	C917	NCB21EK-104X	CC	0.1µF	25V	B
	C918	NCB21EK-104X	CC	0.1µF	25V	B
	C919	QETN1HM-106Z	CE	10µF	50V	
	C1001	QETN1HM-224Z	CE	0.22µF	50V	
	C1002	QETN1HM-224Z	CE	0.22µF	50V	
	C1003	X-E02LF3222M	CE	2200µF	25V	
	C1004	X-E02LF3102M	CE	1000µF	25V	
	C1005	X-CHGTB04H2K	CC	220pF	50V	B
	C1007	QETN1HM-226Z	CE	22µF	50V	
	C1008	QETN1HM-225Z	CE	2.2µF	50V	
	C1009	X-E02LF3102M	CE	1000µF	25V	
	C1010	NCB21HK-472X	CC	4700pF	50V	B
	C1011	X-E02LT3331M	CE	330µF	25V	
	C1012	NCB21HK-472X	CC	4700pF	50V	B
	C1501	QETN0JM-107Z	CE	100µF	6.3V	
	C1502	QETN0JM-107Z	CE	100µF	6.3V	
	C1503	NCB21EK-104X	CC	0.1µF	25V	B
	C1504	NCB21EK-104X	CC	0.1µF	25V	B
	C1505	NCB21CK-105X	CC	1µF	16V	B
	C1506	NCB21EK-104X	CC	0.1µF	25V	B
	C1507	NCB21EK-104X	CC	0.1µF	25V	B
	C1508	NCB21EK-104X	CC	0.1µF	25V	B
	C1509	NCB21HK-103X	CC	0.01µF	50V	B
	C1510	QETN0JM-107Z	CE	100µF	6.3V	
	C1512	NCB21EK-104X	CC	0.1µF	25V	B
	C1513	NCB21EK-104X	CC	0.1µF	25V	B
	C1514	NCB21EK-104X	CC	0.1µF	25V	B
	C1515	NCB21EK-104X	CC	0.1µF	25V	B
	C1516	NCB21EK-104X	CC	0.1µF	25V	B
	C1517	NDC21HJ-101X	CC	100pF	50V	CH
	C1518	QEKJ1HM-105Z	CE	1µF	50V	
	C1519	NCB21EK-104X	CC	0.1µF	25V	B
	C1520	QETN0JM-107Z	CE	100µF	6.3V	
	C1521	NCB21EK-104X	CC	0.1µF	25V	B
	C1523	NCF21HZ-104X	CC	0.1µF	50V	F
	C1525	QETN0JM-107Z	CE	100µF	6.3V	
	C1526	NCB21HK-103X	CC	0.01µF	50V	B
	C1528	QETN1CM-107Z	CE	100µF	16V	
	C1530	QEKJ1CM-476Z	CE	47µF	16V	
	C1531	NCB21HK-103X	CC	0.01µF	50V	B
	C1532	QETN1CM-107Z	CE	100µF	16V	
	C1533	NDC21HJ-220X	CC	22pF	50V	CH
	C1535	QEKJ1CM-106Z	CE	10µF	16V	

	Symbol No.	Part No.	Part Name	Description
	DIODES			
	D001	X-D97U03301B	ZENER	MTZJ33BT-77
	D104	X-D1VT001330	SILICON	1SS133T-77
	D105	X-D1VT001330	SILICON	1SS133T-77
	D106	X-D97U05R11B	ZENER	MTZJ5.1BT-77
	D107	X-D1VT001330	SILICON	1SS133T-77
	D108	X-D1VT001330	SILICON	1SS133T-77
	D109	X-0021E5Q210	LED	LTL-1CHGE-002A
	D110	X-D1VT001330	SILICON	1SS133T-77
	D113	X-D97U05R61B	ZENER	MTZJ5.6BT-77
	D402	X-D2WT011E10	SILICON	11E1-EIC
	D403	X-D97U03001B	ZENER	MTZJ30BT-77
	D404	X-D97U05R11B	ZENER	MTZJ5.1BT-77
	D405	X-D2WTAU02A0	SILICON	AU02A-EIC
	D406	X-D97U05R61B	ZENER	MTZJ5.6BT-77
	D407	X-D2WTAU02A0	SILICON	AU02A-EIC
	D408	X-D2CF0715L0	SILICON	ERD07-15L50
	D409	X-D2CF2016L0	SILICON	FE201-6L49
	D410	X-D97U03001B	ZENER	MTZJ30BT-77
	D411	X-D2WTAU02A0	SILICON	AU02A-EIC
	D414	X-D2WT011E10	SILICON	11E1-EIC
	D415	X-D2WT011E10	SILICON	11E1-EIC
	D416	X-D1VT001330	SILICON	1SS133T-77
	D417	X-D1VT001330	SILICON	1SS133T-77
	D419	X-D1VT001330	SILICON	1SS133T-77
	D501	X-D2WTRM11C0	SILICON	RM11C-EIC
	D502	X-D2WTRM11C0	SILICON	RM11C-EIC
	D503	X-D2WTRM11C0	SILICON	RM11C-EIC
	D504	X-D2WTRM11C0	SILICON	RM11C-EIC
	D505	X-D28F30DF60	RECTIFIER	30DF6-FC
	D506	X-D2WXN49370	SILICON	1N4937

⚠	Symbol No.	Part No.	Part Name	Description	Local
	DIODES				
	D507	X-D1VT001330	SILICON	1SS133T-77	
	D508	X-D97U03R91B	ZENER	MTZJ3.9BT-77	
	D509	X-D97U01801B	ZENER	MTZJ18BT-77	
	D510	X-D2CF2016L0	SILICON	FE201-6L49	
	D511	X-D2WXN49370	SILICON	1N4937	
	D512	X-D28T21DQN9	SCHOTTKY	21DQ09N-TA2B1	
	D513	X-D1VT001330	SILICON	1SS133T-77	
	D514	X-D1VT001330	SILICON	1SS133T-77	
	D516	X-D1VT001330	SILICON	1SS133T-77	
	D517	X-D1VT001330	SILICON	1SS133T-77	
	D520	X-D1VT001330	SILICON	1SS133T-77	
	D523	X-D97U01801B	ZENER	MTZJ18BT-77	
	D524	X-D1VT001330	SILICON	1SS133T-77	
	D525	X-D97U01801B	ZENER	MTZJ18BT-77	
	D528	X-D97U05R61B	ZENER	MTZJ5.6BT-77	
	D601	X-D1VT001330	SILICON	1SS133T-77	
	D602	X-D97U08R21B	ZENER	MTZJ8.2BT-77	
	D603	X-D97U01501B	ZENER	MTZJ15BT-77	
	D604	X-D97U01201B	ZENER	MTZJ12BT-77	
	D605	X-D1VT001330	SILICON	1SS133T-77	
	D606	X-D1VT001330	SILICON	1SS133T-77	
	D607	X-D1VT001330	SILICON	1SS133T-77	
	D608	X-D2WT011E10	SILICON	11E1-EIC	
	D701	X-D97U01201B	ZENER	MTZJ12BT-77	
	D702	X-D97U01201B	ZENER	MTZJ12BT-77	
	D703	X-D97U01201B	ZENER	MTZJ12BT-77	
	D704	X-D97U01201B	ZENER	MTZJ12BT-77	
	D705	X-D97U01201B	ZENER	MTZJ12BT-77	
	D706	X-D97U01201B	ZENER	MTZJ12BT-77	
	D709	X-D97U06R21B	ZENER	MTZJ6.2BT-77	
⚠	IC504	X-0002E00610	PHOTO COUPLER	LTV-817M-VB	
⚠	TH501	X-DF5EL3R0A0	DEGAUSS ELEMENT	ZPB45BL3R0A	
	ICS				
	IC101	X-I56F07093A	IC	OEC7093A	
	IC199	X-A3M603Z015	IC	S-24C16AFJA-TB-01	
	IC302	X-I01FF58910	IC	AN5891SA-E1V	
	IC401	X-I03TD80410	IC	LA78041	
	IC601	X-I06FC12830	IC	M61283FP	
	IC701	X-I0UF015010	IC	MM1501XNRE	
	IC702	X-I0UF015010	IC	MM1501XNRE	
	IC902	X-I01FF58290	IC	AN5829S	
	IC1001	X-I0FSP52760	IC	AN5276	
	IC1501	X-I03FE76600	IC	LA76600M-TLM	
	IC1502	X-I0UF015010	IC	MM1501XNRE	
	IC1503	X-I0UF015010	IC	MM1501XNRE	
	TRANSISTORS				
	Q101	X-TCAA3875SY	SILICON	KTC3875S_Y_RTK	
	Q103	X-TCAA3875SY	SILICON	KTC3875S_Y_RTK	
	Q402	X-TCAT03227Y	SILICON	KTC3227_Y-AT	
	Q405	X-TD50026380	SILICON	2SD2638	
	Q408	X-TAATA12660	SILICON	KTA1266-AT(Y,GR)	
	Q409	X-TAATA12660	SILICON	KTA1266-AT(Y,GR)	
	Q410	X-TC30041590	SILICON	2SC4159(D,E)	
	Q411	X-TCAA3875SY	SILICON	KTC3875S_Y_RTK	
	Q502	X-T220033260	FET	2SK3326(2)	
	Q503	X-TA3T1371A0	SILICON	2SA1371(D,E)-AE	
	Q504	X-TCATC31980	SILICON	KTC3198-AT(Y,GR)	
	Q505	X-TC3T029090	SILICON	2SC2909(S,T)-AA	
	Q507	X-TCATC31980	SILICON	KTC3198-AT(Y,GR)	
	Q508	X-TAAT012714	SILICON	KTA1271_Y-AT	
	Q509	X-TCATC31980	SILICON	KTC3198-AT(Y,GR)	
	Q512	X-TA3T016240	SILICON	2SA1624-AA	
	Q514	X-TCAT032034	SILICON	KTC3203_Y-AT	
	Q601	X-TCAT03209Y	SILICON	KTC3209_Y-AT	
	Q602	X-TCAT03209Y	SILICON	KTC3209_Y-AT	
	Q603	X-TCAA3875SY	SILICON	KTC3875S_Y_RTK	
	Q604	X-TCAT03209Y	SILICON	KTC3209_Y-AT	
	Q605	X-TCAA3875SY	SILICON	KTC3875S_Y_RTK	
	Q606	X-TCAT03209Y	SILICON	KTC3209_Y-AT	
	Q607	X-TCAT032034	SILICON	KTC3203_Y-AT	
	Q610	X-TCAA3875SY	SILICON	KTC3875S_Y_RTK	
	Q611	X-TCAT03209Y	SILICON	KTC3209_Y-AT	
	Q613	X-TCAA3875SY	SILICON	KTC3875S_Y_RTK	
	Q614	X-TAAA1504SY	SILICON	KTA1504S_Y_RTK	
	Q709	X-TAAA1504SY	SILICON	KTA1504S_Y_RTK	
	Q711	X-TCAA3875SY	SILICON	KTC3875S_Y_RTK	

⚠	Symbol No.	Part No.	Part Name	Description	Local
	TRANSISTORS				
	Q712	X-TCAA3875SY	SILICON	KTC3875S_Y_RTK	
	Q901	X-TAAA1504SY	SILICON	KTA1504S_Y_RTK	
	Q902	X-TAAA1504SY	SILICON	KTA1504S_Y_RTK	
	Q1001	X-TNAAJ05003	COMPOUND TRANSISTOR	KRC111SRTK	
	Q1503	X-TCAA3875SY	SILICON	KTC3875S_Y_RTK	
	Q1504	X-TCAA3875SY	SILICON	KTC3875S_Y_RTK	
	Q1507	X-TCAA3875SY	SILICON	KTC3875S_Y_RTK	
	Q1508	X-TCAA3875SY	SILICON	KTC3875S_Y_RTK	
	COILS				
	B401	X-024HT03564	CORE,BEADS	W4BRH3.5X6X1.0	
	B402	X-024HT03564	CORE,BEADS	W4BRH3.5X6X1.0	
	B405	X-024HT03564	CORE,BEADS	W4BRH3.5X6X1.0	
	B501	X-024AT03481	CORE,BEADS	BL02RN1-R62T2	
	B504	X-024HT03553	CORE,BEADS	W5RH3.5X5X1.0	
	L301	X-02167F101J	COIL	100µH	
	L402	X-022100034A	COIL,LINEARITY	ELH5L4132N	
	L403	X-02DK000058	COIL,CHOKE	02DK000058	
⚠	L501	X-029T000101	COIL,LINE FILTER	2R2A752F28Y	
	L601	X-0216A6330J	COIL	33µH	
	L901	X-02167F101J	COIL	100µH	
	L1501	X-02167F101J	COIL	100µH	
	L1502	X-02167F221J	COIL	220µH	
	L1503	X-02167F221J	COIL	220µH	
	L1505	X-02167F150J	COIL	15µH	
	L1508	X-02167F101J	COIL	100µH	
	L1510	X-02167F150J	COIL	15µH	
	L1511	X-02167F150J	COIL	15µH	
	L1512	X-0216A6220J	COIL	22µH	
	TRANSFORMERS				
⚠	FB401	X-043224005F	TRANSFORMER,FLYBACK	FSU24A001	
	T401	X-450190161	TRANS,HORIZONTAL DRIVE	ETH19Y203AY	
⚠	T501	X-048140066S	TRANSFORMER,SWITCHING	8140066S	
	JACKS				
	J701	X-060J431019	RCA JACK	MSP-213V2-432PBSN	
	J702	X-063Q700002	JACK	YKF51-5503	
	J703	X-060J431019	RCA JACK	MSP-213V2-432PBSN	
	J704	X-060J411024	RCA JACK	MSP-213V1-652PBSN	
	J705	X-060G401047	RCA JACK	HTJ-032-03AY	
	J706	X-060G401046	RCA JACK	HTJ-032-03AW	
	J707	X-060G401039	RCA JACK	HTJ-032-03AR	
	J708	X-060J431019	RCA JACK	MSP-213V2-432PBSN	
	J1001	X-060J131015	HEADPHONE JACK	MSJ-2000	
	SWITCHES				
	SW101	X-0504101T34	SWITCH,TACT	EVQ21505R	
	SW102	X-0504101T34	SWITCH,TACT	EVQ21505R	
	SW103	X-0504101T34	SWITCH,TACT	EVQ21505R	
	SW104	X-0504101T34	SWITCH,TACT	EVQ21505R	
	SW105	X-0504101T34	SWITCH,TACT	EVQ21505R	
	VARIABLE RESISTORS				
	VR401	X-V1K63H3BTE	VOLUME,SEMI FIXED	NVG6TLTAB222	
	VR502	X-V1163H4BTC	VOLUME,SEMI FIXED	EVNCYAA03BE4	
	CONNECTORS				
	CP101	X-694270139	CONNECTOR PCB SIDE	173979-7	
	CP401	X-069X460029	CONNECTOR PCB SIDE	B06B-DVS	
	CP502	X-069S420110	CONNECTOR PCB SIDE	A1561WV2-2P	
	CP507	X-069D01001A	CONNECTOR PCB SIDE	003P-2100	
	CP508	X-069D01001A	CONNECTOR PCB SIDE	003P-2100	
	CP1001	X-069S140419	CONNECTOR PCB SIDE	A2502WV2-4P	
	CRYSTAL & CERAMIC OSCILLATORS				
	X101	X-100CT8R005	CRYSTAL	HC-49/U-S	
	X602	X-100CT3R505	CRYSTAL	HC-49/C	

⚠	Symbol No.	Part No.	Part Name	Description	Local
	TUNER				
⚠	TU001	X-163300005	RF UNIT	115-V-K015ARB	
	FUSES				
	CP801A	X-067U005049	WIRE HOLDER	B2013H02-5P	
	CP802A	X-067U007029	WIRE HOLDER	B2013H02-7P	
	CP851A	X-067U004029	WIRE HOLDER	B2013H02-4P	
⚠	F501	X-081PC6R305	FUSE	51MS063L	
	FH501	X-06710T0006	HOLDER,FUSE	EYF-52BC	
	FH502	X-06710T0006	HOLDER,FUSE	EYF-52BC	
	AC CORD				
⚠	CD501	X-120R415902	CORD AC BUSH	0R415902	
	RELAYS				
⚠	RY501	X-0560V20115	RELAY	ALKS321	
	OTHERS				
	CD801	X-06CU253401	CORD CONNECTOR	CU253401	
	CD802	X-06CU274501	CORD CONNECTOR	CU274501	
	CD851	X-06CU244701	CORD CONNECTOR	CU244701	
	EL001	X-124120301A	EYE LET	XRY20X30BD	
	EL002	X-124116281A	EYE LET	XRY16X28BD	
	OS101	X-773071001	REMOTE RECEIVER	RPM7138-H5	

VM COIL PCB ASS'Y

⚠	Symbol No.	Part No.	Part Name	Description	Local
	PCB060	X-A3M6030060	VM COIL PCB ASS'Y	TEAA93B	
	FUSES				
	CP852B	X-067U003029	WIRE HOLDER	B2013H02-3P	
	OTHERS				
	CD852	X-06CU232001	CORD CONNECTOR	CU232001	

CRT SOCKET PCB ASS'Y

⚠	Symbol No.	Part No.	Part Name	Description	Local
	PCB110	X-A3M6030110	CRT PCB ASS'Y	TCA391B	
	RESISTORS				
⚠	R804	X-R3X18A153J	R,METAL OXIDE	15kΩ 2W	
	R806	X-R3X18A153J	R,METAL OXIDE	15kΩ 2W	
⚠	R808	X-R3X18A153J	R,METAL OXIDE	15kΩ 2W	
	R809	QRE141J-101Y	RC	100Ω 1/4W	
	R810	QRE141J-182Y	RC	1.8kΩ 1/4W	
	R811	QRE141J-182Y	RC	1.8kΩ 1/4W	
	R812	QRE141J-182Y	RC	1.8kΩ 1/4W	
	R813	QRE141J-221Y	RC	220Ω 1/4W	
	R814	QRE141J-221Y	RC	220Ω 1/4W	
	R815	QRE141J-221Y	RC	220Ω 1/4W	
	R817	QRE141J-331Y	RC	330Ω 1/4W	
	R818	QRE141J-101Y	RC	100Ω 1/4W	
	R819	QRE141J-331Y	RC	330Ω 1/4W	
	R820	QRE141J-101Y	RC	100Ω 1/4W	
	RESISTORS				
	R821	QRE141J-331Y	RC	330Ω 1/4W	
	R822	QRE141J-101Y	RC	100Ω 1/4W	
	R828	QRE141J-272Y	RC	2.7kΩ 1/4W	
	R829	QRE141J-272Y	RC	2.7kΩ 1/4W	
	R830	QRE141J-272Y	RC	2.7kΩ 1/4W	
	R853	QRE141J-223Y	RC	22kΩ 1/4W	
	R854	QRE141J-333Y	RC	33kΩ 1/4W	
⚠	R855	X-R65582331J	R,FUSE	330Ω 1/2W	
	R856	QRE141J-102Y	RC	1kΩ 1/4W	
	R857	QRE121J-471Y	RC	470Ω 1/2W	
	R858	QRE141J-101Y	RC	100Ω 1/4W	
	R859	QRE141J-272Y	RC	2.7kΩ 1/4W	
	R860	QRE141J-330Y	RC	33Ω 1/4W	
	R861	QRE141J-333Y	RC	33kΩ 1/4W	
	R862	QRE141J-392Y	RC	3.9kΩ 1/4W	
	R863	QRE141J-392Y	RC	3.9kΩ 1/4W	
	R864	QRE141J-393Y	RC	39kΩ 1/4W	
	R865	QRE141J-563Y	RC	56kΩ 1/4W	
	R866	QRE141J-222Y	RC	2.2kΩ 1/4W	
	R867	QRE121J-100Y	RC	10Ω 1/2W	
	R868	QRE141J-820Y	RC	82Ω 1/4W	
	R869	QRE141J-820Y	RC	82Ω 1/4W	
	R870	QRE141J-152Y	RC	1.5kΩ 1/4W	
	R871	QRE141J-152Y	RC	1.5kΩ 1/4W	
	R872	QRE141J-122Y	RC	1.2kΩ 1/4W	
	R873	QRE141J-683Y	RC	68kΩ 1/4W	
	R874	QRE141J-683Y	RC	68kΩ 1/4W	
	R875	QRE141J-122Y	RC	1.2kΩ 1/4W	
	R876	QRE141J-123Y	RC	12kΩ 1/4W	
	R877	QRE121J-680Y	RC	68Ω 1/2W	
	R878	QRE121J-680Y	RC	68Ω 1/2W	
	R879	QRE121J-2R7Y	RC	2.7Ω 1/2W	
	R880	QRE121J-2R7Y	RC	2.7Ω 1/2W	
	R881	X-R3X18A221J	R,METAL OXIDE	220Ω 2W	
	CAPACITORS				
	C804	X-CQGTCH4L2J	CC	330pF 50V CH	
	C805	X-CQGTCH4Q2J	CC	470pF 50V CH	
	C806	X-CQGTCH4S2J	CC	560pF 50V CH	
	C808	X-C0JBB07H3K	CC	2200pF 2kV B	
	C809	X-E0ELTD4R7M	CE	4.7µF 250V	
	C813	X-P1S3T0222J	CP	2200pF 50V	
	C821	X-CQGTCH412J	CC	100pF 50V CH	
	C852	X-E02LT2470M	CE	47µF 16V	
	C853	X-E02LT2470M	CE	47µF 16V	
	C854	X-E02LTB100M	CE	10µF 160V	
	C855	X-CQGTCH4S2J	CC	560pF 50V CH	
	C856	QCBB1HK-103Y	CC	0.01µF 50V B	
	C857	X-CHGTB0413K	CC	1000pF 50V B	
	C858	X-C0JTCH412J	CC	100pF 50V CH	
	C859	X-C0JTCH412J	CC	100pF 50V CH	
	C860	X-C0JTB05Q3K	CC	4700pF 500V B	
	C861	X-C0JTB05Q3K	CC	4700pF 500V B	
	C862	X-E02LT2470M	CE	47µF 16V	
	C863	X-E02LT2470M	CE	47µF 16V	
	C864	X-E02LTB100M	CE	10µF 160V	
	C865	X-C0JTB05E2K	CC	150pF 500V B	
	DIODES				
	D801	X-D1VT001330	SILICON	1SS133T-77	
	D802	X-D1VT001330	SILICON	1SS133T-77	
	D803	X-D1VT001330	SILICON	1SS133T-77	
	D804	X-D1VT001330	SILICON	1SS133T-77	
	D805	X-D1VT001330	SILICON	1SS133T-77	
	D806	X-D1VT001330	SILICON	1SS133T-77	
	D807	X-D1VT001330	SILICON	1SS133T-77	
	D808	X-D1VT001330	SILICON	1SS133T-77	
	D809	X-D1VT001330	SILICON	1SS133T-77	
	D852	X-D1VT001330	SILICON	1SS133T-77	
	D853	X-D1VT001330	SILICON	1SS133T-77	
	D854	X-D1VT001330	SILICON	1SS133T-77	
	D855	X-D1VT001330	SILICON	1SS133T-77	
	D856	X-D1VT001330	SILICON	1SS133T-77	
	D857	X-D28TELS2N2	RECTIFER	10ELS2N-TA1B2	

⚠	Symbol No.	Part No.	Part Name	Description	Local
	D858	X-D28TELS2N2	RECTIFER	10ELS2N-TA1B2	

TRANSISTORS

⚠	Q801	X-TCA0042170	SILICON	KTC4217(O,Y)	
⚠	Q802	X-TCA0042170	SILICON	KTC4217(O,Y)	
⚠	Q803	X-TCA0042170	SILICON	KTC4217(O,Y)	
⚠	Q810	X-TCATC3199Y	SILICON	KTC3199_Y-AT	
⚠	Q811	X-TCATC3199Y	SILICON	KTC3199_Y-AT	
⚠	Q812	X-TCATC3199Y	SILICON	KTC3199_Y-AT	
	Q852	X-TCATC31980	SILICON	KTC3198-AT(Y,GR)	
	Q853	X-TCUT00752Y	SILICON	2SC752(G)(TM)_Y	
	Q854	X-TCATC31980	SILICON	KTC3198-AT(Y,GR)	
	Q855	X-TCATC31980	SILICON	KTC3198-AT(Y,GR)	
	Q856	X-TCATC31980	SILICON	KTC3198-AT(Y,GR)	
	Q857	X-TAATA12660	SILICON	KTA1266-AT(Y,GR)	
	Q858	X-TAU0018370	SILICON	2SA1837	
	Q859	X-TCU0047930	SILICON	2SC4793	

COILS

B851	X-024HT03553	CORE,BEADS	W5RH3.5X5X1.0	
B852	X-024HT03553	CORE,BEADS	W5RH3.5X5X1.0	
B853	X-024HT03553	CORE,BEADS	W5RH3.5X5X1.0	
L802	X-021673151K	COIL	150µH	
L803	X-021673151K	COIL	150µH	
L804	X-021673151K	COIL	150µH	

CONNECTORS

CP803	X-069S330010	CONNECTOR PCB SIDE	A2361WV2-3P	
CP804	X-069W010010	CONNECTOR PCB SIDE	005P-2100	
CP852	X-069S230629	CONNECTOR PCB SIDE	A2001WV2-3P	
CP801B	X-069S250629	CONNECTOR PCB SIDE	A2001WV2-5P	
CP802B	X-069S270629	CONNECTOR PCB SIDE	A2001WV2-7P	
CP851B	X-069S240629	CONNECTOR PCB SIDE	A2001WV2-4P	

CRT SOCKET

⚠	J801	X-066C130017	SOCKET,CRT	CVT3275-5101	

MISCELLANEOUS

⚠	Symbol No.	Part No.	Part Name	Description	Local

COILS

⚠	L503	X-028R250009	COIL,DEGAUSS	8R250009	

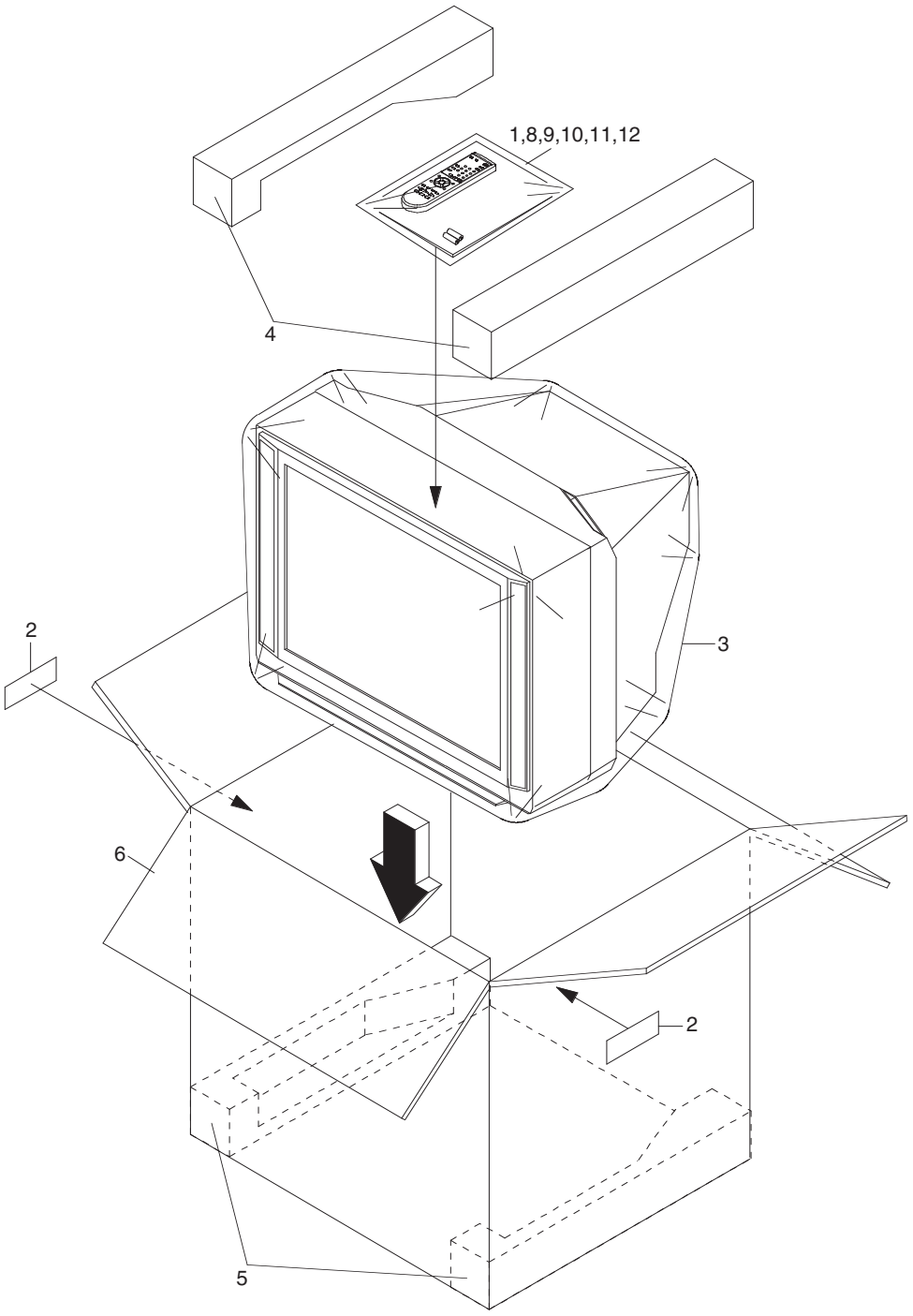
OTHERS

	CD803	X-06CP83035A	CORD CONNECTOR	CP83035A	
	CD1001	X-06CU14411A	CORD CONNECTOR	CU14411A	
	SP1001	X-070C457003	SPEAKER	SG05K07BRA	
	SP1002	X-070C457003	SPEAKER	SG05K07BRA	
⚠	V801	X-098W250401	CRT W/DY	A60LVY196X11(O)	

REMOTE CONTROL UNIT PARTS LIST (RMC-1256G)

⚠	Ref.No.	Part No.	Part Name	Description	Local
		UR77EC0603B	BATTERY COVER		

PACKING



ACCESSORY REPLACEMENT PARTS LIST

⚠ REF. NO.	PART NO.	PART NAME	DESCRIPTION
1	X-076G0GG010	TRANSMITTER	RM-C1256G
2	X-723000C172	SHEET,UPC	
3	X-791WHA0092	LAMIFILM,BAG	
4	X-792WHA0309	PACKAGE,TOP	
5	X-792WHA0310	PACKAGE,BOTTOM	
6	X-793WCDB664	GIFT BOX	
8	X-JB5KD400	POLYBAG,INSTRUCTION(RED CAUTION)	
9	X-J3M80301A	INSTRUCTION BOOK	
10	X-J5500112G	GUARANTEE CARD(CANADA)	
11	X-J5500117	REGISTRATION CARD	
12	X-J5501202B	GUARANTEE CARD(USA)	